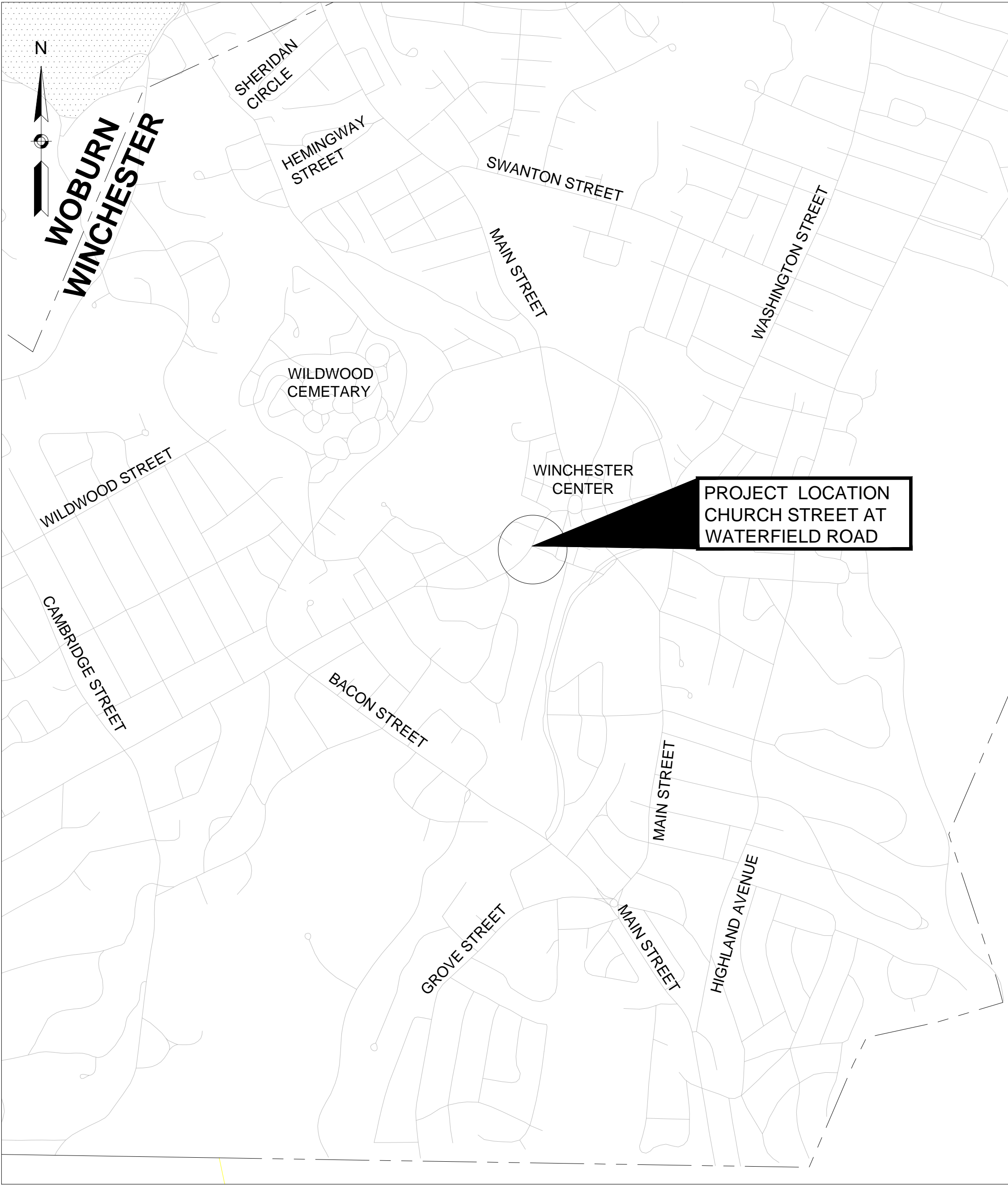


TOWN OF WINCHESTER

ROADWAY IMPROVEMENTS

CHURCH STREET AT WATERFIELD ROAD



LOCUS PLAN
1"=250'

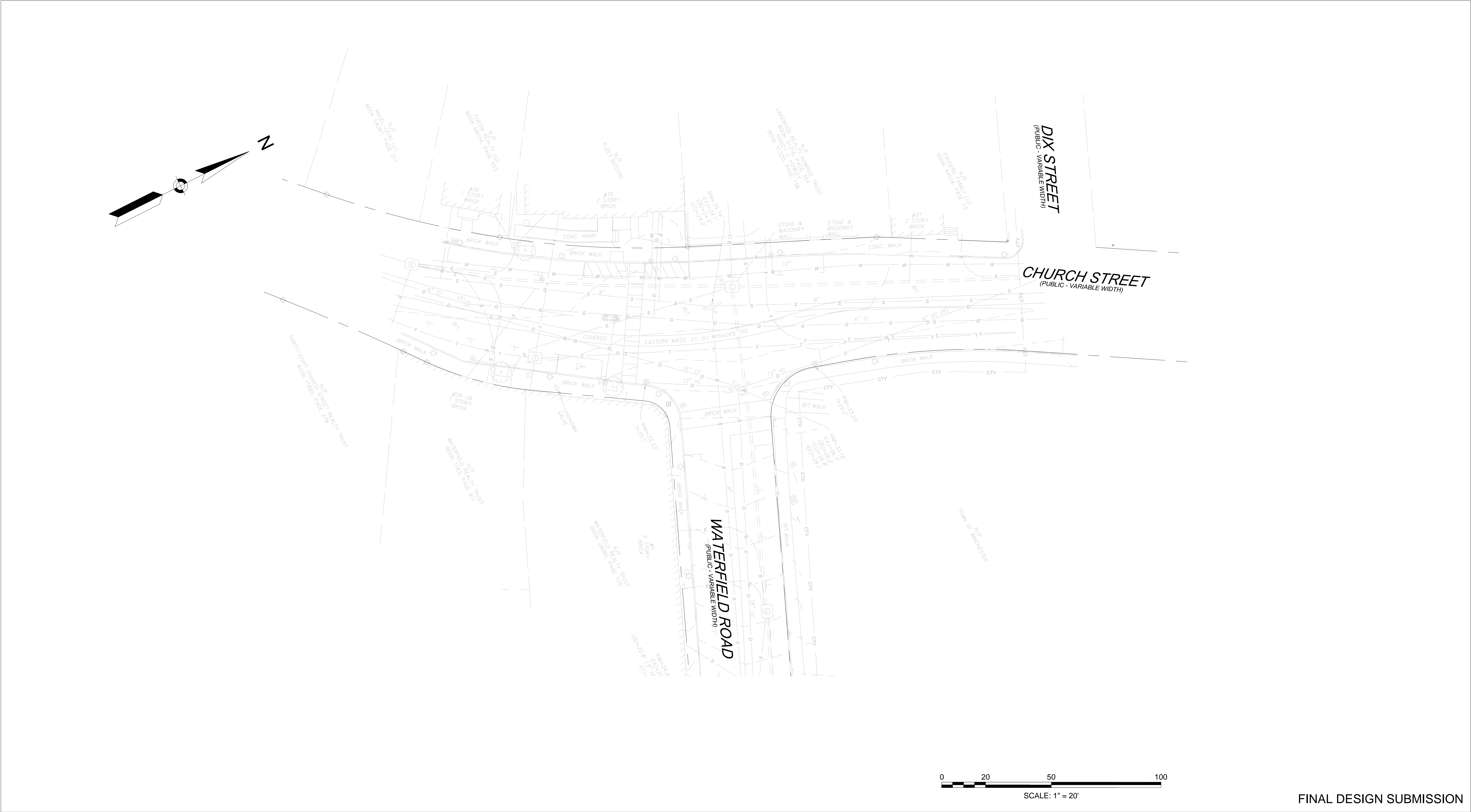
ALL WORK SHALL CONFORM TO THESE PLANS, THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSDOT) STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2020, THE MASSDOT 2016 CONSTRUCTION STANDARD DETAILS, THE MASSDOT 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, 2009 EDITION, AND ALL INTERIM REVISIONS PUBLISHED BY FEDERAL HIGHWAY ADMINISTRATION.

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CT.01	5	CURB TIE PLAN
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WCR.01	7	WHEELCHAIR RAMP GRADING PLAN
PM.01	8	TRAFFIC SIGN & PAVEMENT MARKING PLAN
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TTCP.01-TTCP.03	11-13	TEMPORARY TRAFFIC CONTROL PLANS
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FINAL DESIGN SUBMISSION

PROFESSIONAL CERTIFICATION		REUSE OF DOCUMENTS				CHURCH STREET AT WATERFIELD ROAD		TITLE SHEET & INDEX		PROJECT NO.
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF [STATE], LICENSE NO. 49208, EXPIRATION DATE: 6/30/2022.		ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.				<div>TOOLE DESIGN</div> <div>2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com</div>				60169
		DSGN	KMF							DATE
		DR	CBK							AUGUST 2021
		CHK	MAB							DRAWING NO.
		APVD	ELG	NO.	DATE	REVISION	BY	APVD		G.01
										SHEET NO.
										1 OF 19

GENERAL SYMBOLS			TRAFFIC SYMBOLS			ABBREVIATIONS			ABBREVIATIONS (cont.)		
EXISTING	PROPOSED	DESCRIPTION	EXISTING	PROPOSED	DESCRIPTION	GENERAL	GENERAL	GENERAL	GENERAL	GENERAL	GENERAL
		CATCH BASIN			CONTROLLER PHASE ACTUATED	AADT	ANNUAL AVERAGE DAILY TRAFFIC	MH	MANHOLE		
		CATCH BASIN CURB INLET			TRAFFIC SIGNAL HEAD (SIZE AS NOTED)	ABAN	ABANDON	MHB	MASSACHUSETTS HIGHWAY BOUND		
		GUTTER INLET			WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)	A.C.	ASPHALT CONCRETE	MIN	MINIMUM		
		GAS PUMP			VIDEO DETECTION CAMERA	ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE	NIC	NOT IN CONTRACT		
		MAIL BOX			MICROWAVE DETECTOR	ADJ	ADJUST	NO.	NUMBER		
		POST SQUARE			PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE	APPROX.	APPROXIMATE	PC	POINT OF CURVATURE		
		POST CIRCULAR			EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT	BC	BOTTOM OF CURB	PCC	POINT OF COMPOUND CURVATURE		
		WELL			VEHICULAR SIGNAL HEAD	BD.	BOUND	P.G.L.	PROFILE GRADE LINE		
		ELECTRIC HANDHOLE			VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED	BE	BEGIN ERADICATION	PI	POINT OF INTERSECTION		
		FENCE GATE POST			FLASHING BEACON	BIT.	BITUMINOUS	POC	POINT ON CURVE		
		GAS GATE			PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)	BL	BASELINE	POT	POINT ON TANGENT		
		BORING HOLE			RAILROAD SIGNAL	BLDG	BUILDING	PRC	POINT OF REVERSE CURVATURE		
		MONITORING WELL			SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)	BM	BENCHMARK	PROJ	PROJECT		
		TEST PIT			MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)	BO	BY OTHERS	PROP	PROPOSED		
		HYDRANT			HIGH MAST POLE OR TOWER	BOS	BOTTOM OF SLOPE	PSB	PLANTABLE SOIL BORROW		
		LIGHT POLE			SIGN AND POST	BR.	BRIDGE	PT	POINT OF TANGENCY		
		COUNTY BOUND			SIGN AND POST (2 POSTS)	CB	CATCH BASIN	PVC	POINT OF VERTICAL CURVATURE		
		GPS POINT			MAST ARM WITH LUMINAIRE	CBCI	CATCH BASIN WITH CURB INLET	PVI	POINT OF VERTICAL INTERSECTION		
		CABLE MANHOLE			OPTICAL PRE-EMPTION DETECTOR	CC	CEMENT CONCRETE	PVMT	PAVEMENT		
		DRAINAGE MANHOLE			CONTROL CABINET, GROUND MOUNTED	CCM	CEMENT CONCRETE MASONRY	PVT	POINT OF VERTICAL TANGENCY		
		ELECTRIC MANHOLE			CONTROL CABINET, POLE MOUNTED	CEM	CEMENT	PWW	PAVED WATER WAY		
		GAS MANHOLE			FLASHING BEACON CONTROL AND METER PEDESTAL	CI	CURB INLET or CAST IRON	R	RADIUS OF CURVATURE		
		MISC MANHOLE			LOAD CENTER ASSEMBLY	CIP	CAST IRON PIPE	(R)	RECORD INFORMATION		
		SEWER MANHOLE			PULL BOX 12"x12" (OR AS NOTED)	CIT	CHANGE IN TYPE	RCP	REINFORCED CONCRETE PIPE		
		TELEPHONE MANHOLE			ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)	CL	CENTERLINE	R&D	REMOVE AND DISPOSE		
		WATER MANHOLE				CLF	CHAIN LINK FENCE	RD	ROAD		
		MASSACHUSETTS HIGHWAY BOUND				CMP	CORRUGATED METAL PIPE	RDWY	ROADWAY		
		MONUMENT				CO.	COUNTY	REM	REMOVE		
		STONE BOUND				CONC	CONCRETE	RET	RETAIN		
		TOWN OR CITY BOUND				CONT	CONTINUOUS	RET WALL	RETAINING WALL		
		TRAVERSE OR TRIANGULATION STATION				CONST	CONSTRUCTION	ROW	RIGHT OF WAY		
		TROLLEY POLE OR GUY POLE				CPP	CORRUGATED PLASTIC PIPE	R&R	REMOVE AND RESET		
		TRANSMISSION POLE				CR GR	CROWN GRADE	RR	RAILROAD		
		UTILITY POLE W/ FIREBOX				CSP	CORRUGATED STEEL PIPE	R&S	REMOVE AND STACK		
		UTILITY POLE WITH DOUBLE LIGHT				DHV	DESIGN HOURLY VOLUME	RT	RIGHT		
		UTILITY POLE W / 1 LIGHT				DI	DROP INLET	RY	RAILWAY		
		UTILITY POLE				DIA	DIAMETER	SB	STONE BOUND		
		BUSH				DIP	DUCTILE IRON PIPE	SHLD	SHOULDER		
		TREE				DW	STEADY DON'T WALK - PORTLAND ORANGE	SHLO	STATE HIGHWAY LAYOUT LINE		
		STUMP				DWY	DRIVEWAY	SMH	SEWER MANHOLE		
		WATER GATE				EE	END ERADICATION	SSD	STOPPING SIGHT DISTANCE		
		PARKING METER				ELEV (or EL.)	ELEVATION	ST	STREET		
		OVERHEAD CABLE/WIRE				EMB	EMBANKMENT	STA	STATION		
		CURBING				EOP	EDGE OF PAVEMENT	SW	SIDEWALK		
		CONTOURS (ON-THE-GROUND SURVEY DATA)				EXC	EXCAVATION	T	TANGENT DISTANCE OF CURVE/TRUCK %		
		CONTOURS (PHOTOGRAMMETRIC DATA)				EXIST (or EX)	EXISTING	TAN	TANGENT		
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)				F&C	FRAME AND COVER	TC	TOP OF CURB		
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)				F&G	FRAME AND GRATE	TEMP	TEMPORARY		
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)				FDN.	FOUNDATION	TOS	TOP OF SLOPE		
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)				FG	FINISHED GRADE	TYP	TYPICAL		
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)				FLDSTN	FIELDSTONE	UP	UTILITY POLE		
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)				FYG	FLUORESCENT YELLOW- GREEN	VAR	VARIES		
		BALANCED STONE WALL				GAR	GARAGE	VC	VERTICAL CURVE		
		GUARD RAIL - STEEL POSTS				GD	GROUND	VERT	VERTICAL		
		GUARD RAIL - WOOD POSTS				GG	GAS GATE	VGC	VERTICAL GRANITE CURB		
		CHAIN LINK OR METAL FENCE				GI	GUTTER INLET	WCR	WHEEL CHAIR RAMP		
		WOOD FENCE				GIP	GALVANIZED IRON PIPE	WG	WATER GATE		
		TREE LINE				GRAN	GRANITE	WIP	WROUGHT IRON PIPE		
		SAWCUT LINE				GRAV	GRAVEL	WM	WATER METER/WATER MAIN		
		TOP OR BOTTOM OF SLOPE				GRD	GUARD	WSO	WATER SHUT OFF VALVE		
		EDGE OF PAVEMENT				HDW	HEADWALL	X-SECT	CROSS SECTION		
		LIMIT OF MICROMILLING AND OVERLAY				HMA	HOT MIX ASPHALT				
		BANK OF RIVER OR STREAM				HOR	HORIZONTAL				
		BORDER OF WETLAND				HYD	HYDRANT				
		100 FT WETLAND BUFFER				INV (or I)	INVERT				
		200 FT RIVERFRONT BUFFER				JCT	JUNCTION				
		STATE HIGHWAY LAYOUT				L	LENGTH OF CURVE				
		TOWN OR CITY LAYOUT				LB	LEACH BASIN				
		COUNTY LAYOUT				LP	LIGHT POLE				
		TOWN OR CITY BOUNDARY LINE				LT	LEFT				
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE				MAX	MAXIMUM				
		EASEMENT				MB	MAILBOX				
									FINAL DESIGN SUBMISSION		
PROFESSIONAL CERTIFICATION		REUSE OF DOCUMENTS		EXISTING		PROPOSED		DESCRIPTION			
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE COMMONWEALTH OF MASSACHUSETTS, LICENSE NO. 49208, EXPIRATION DATE: 6/30/2022.		ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.						PAVEMENT ARROW - WHITE			
								LEGEND "ONLY" - WHITE			
								STOP LINE			
								CROSSWALK			
								SOLID WHITE LINE			
								SOLID YELLOW LINE			
								BROKEN WHITE LINE			
								BROKEN YELLOW LINE			
								DOTTED WHITE LINE			
								DOTTED YELLOW LINE			
								DOTTED WHITE LINE EXTENSION			
								DOTTED YELLOW LINE EXTENSION			
								DOUBLE WHITE LINE			
								DOUBLE YELLOW LINE			



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APVD	ELG	NO.	DATE	REVISION	BY	APVD																																			
PROJECT NO. 60169																																									
DATE AUGUST 2021																																									
DRAWING NO. EX.01																																									
		<div>EXISTING CONDITIONS PLAN</div>						SHEET NO. 3 OF 19																																	

GENERAL NOTES:

1.
- THIS PLAN IS BASED UPON AN ON-THE-GROUND SURVEY PERFORMED BY BSC GROUP, INC. IN SEPTEMBER, 2019.

2.
- HORIZONTAL DATUM IS THE NORTH AMERICAN DATUM OF 1983 (NAD 83) AS DERIVED FROM GPS SURVEY PERFORMED BY BSC GROUP, INC.

3.
- VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AS DERIVED FROM GPS SURVEY PERFORMED BY BSC GROUP, INC.

UTILITY NOTE:

1.
- EXISTING UTILITIES, WHERE SHOWN HEREON, ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY LOCATING AND COORDINATING ANY ON-SITE ACTIVITY WITH WINCHESTER DEPARTMENT OF PUBLIC WORKS AND THE APPROPRIATE UTILITY COMPANY AND MAINTAINING EXISTING UTILITY SYSTEM SERVICE. THE CONTRACTOR SHALL VERIFY SIZE, LOCATION AND INVERTS OR UTILITIES AND STRUCTURES AS REQUIRED PRIOR TO THE START OF CONSTRUCTION.

LEGEND:

-
- CEMENT CONCRETE SIDEWALK/WHEELCHAIR RAMP
-
- PLANTING AREA
-
- BRICK SIDEWALK
-
- NEW BIT. CONC

CONSTRUCTION NOTES:

1.
- FOR CURB TIE PLAN SEE SHEET 5.

2.
- FOR PROPOSED PAVEMENT MARKINGS AND SIGNAGE SEE SHEET 8.

2.
- FOR CONSTRUCTION DETAILS SEE SHEETS 14-16.

3.
- FOR WHEELCHAIR RAMP DETAILS SEE SHEET 17.

4.
- THE TERM "MEET EX" MEANS TO MEET BOTH THE EXISTING ALIGNMENT AND ELEVATION.

5.
- AN UNOBSTRUCTED PATH OF TRAVEL WITH A MINIMUM WIDTH OF 3'-3" SHALL BE MAINTAINED PAST ALL OBSTRUCTIONS (UTILITY POLES, SIGNS, MAILBOXES, ALONG DRIVEWAY OPENINGS, ETC.)

6.
- PROPOSED GRANITE TRANSITION CURBING SHALL BE USED AT ALL WHEELCHAIR RAMP LOCATIONS AND TO MEET EXISTING PAVEMENT WHEN REQUIRED.

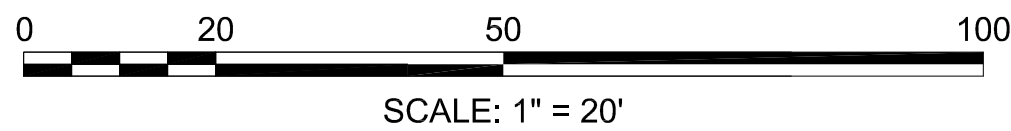
7.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.

8.
- ALL PRIVATELY OWNED UTILITY STRUCTURES (GAS GATES, ELECTRIC/TELEPHONE MANHOLES, ETC.) SHALL BE ADJUSTED TO FINISHED GRADE BY THE PRIVATE UTILITY COMPANY, UNLESS DIRECTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE ALTERATION AND ADJUSTMENT, AS NECESSARY.

9.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE.

10.
- FOR TREE PROTECTION DETAIL SEE SHEET 14.



11.
- FOR DRAINAGE TRENCH DETAIL SEE SHEET 14.

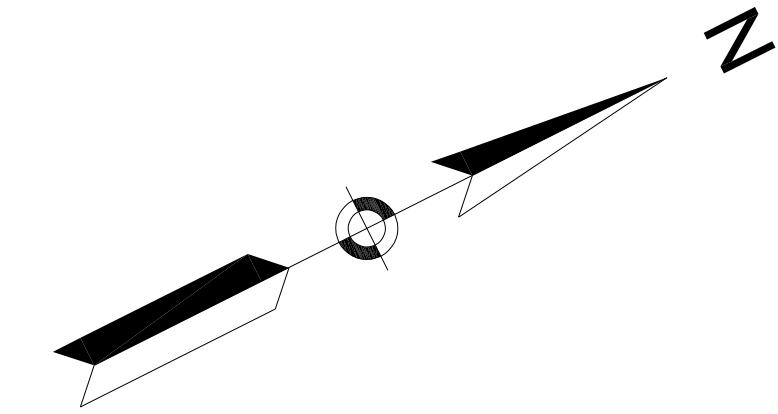


DRAINAGE DATA TABLE					
STR ID	ALIGNMENT	STA & OFFSET	RIM	CONNECTING STR	INV DATA
CB-1	CHURCH STREET	10+69.36 24.99' RT	34.53	DMH-1	*
GI-1	CHURCH STREET	11+05.14 18.03' RT	34.39	DMH-1	31.89 OUT
DMH-1	CHURCH STREET	11+04.92 21.41' RT	34.75	EX DRAIN PIPE	*
				GI-1	*
				CB-1	*
CIT-1	CHURCH STREET	11+79.85 26.17' RT	33.75	EX DMH	29.00 OUT
DMH-2	CHURCH STREET	11+96.54 20.94' RT	34.05	CB-2	*
				EX DRAIN PIPE	*
CB-2	CHURCH STREET	12+12.60 23.08' RT	33.34	DMH-2	*
*INVERT DATA UNAVAILABLE FOR EXISTING PIPES THAT DMH-1 AND DMH-2 ARE PLACED ON TOP OF - CONTRACTOR TO TEST PIT LOCATIONS.					

NOTE:
STA/OFFSET FOR STRUCTURES ARE TO THE FACE OF CURB AND
STRUCTURES ARE TO BE SET PER STANDARD PLANS.

FINAL DESIGN SUBMISSION

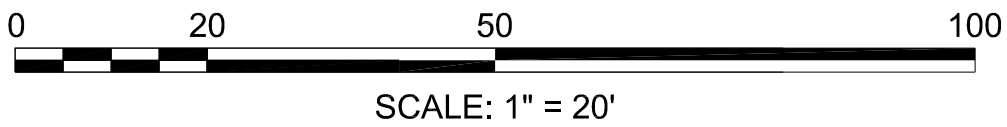
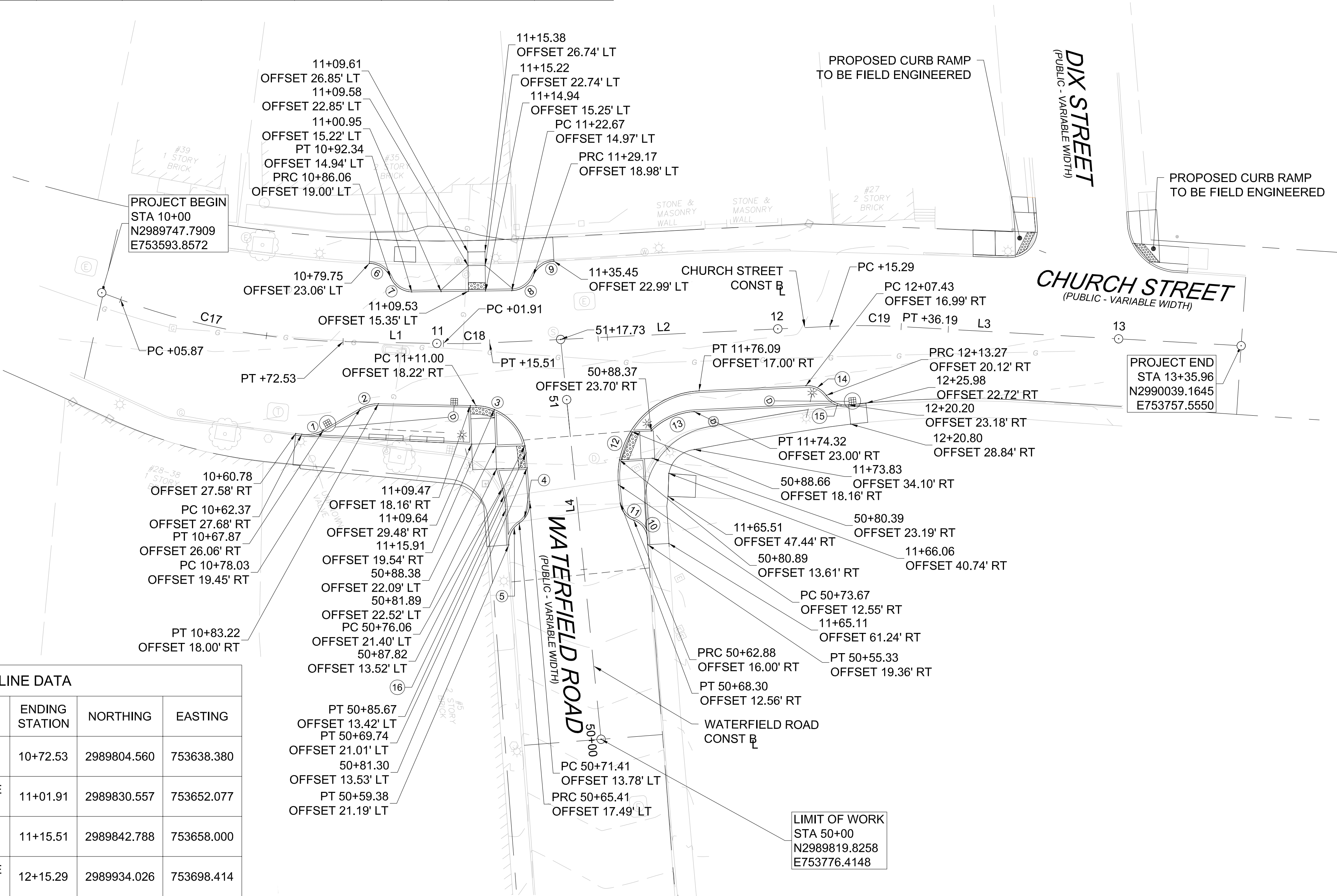
PROFESSIONAL CERTIFICATION			REUSE OF DOCUMENTS							2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com	CHURCH STREET AT WATERFIELD ROAD	CONSTRUCTION PLAN	PROJECT NO.	60169	
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			DSGN	KMF										DRAWING NO.	C.01
			DR	CBK										SHEET NO.	4 OF 19
			CHK	MAB											
		APVD	ELG	NO.	DATE	REVISION	BY	APVD							





WATERFIELD ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	50+00.00	2989819.826	753776.415		N69°07'08"W 117.73'	51+17.73	2989861.789	753666.416

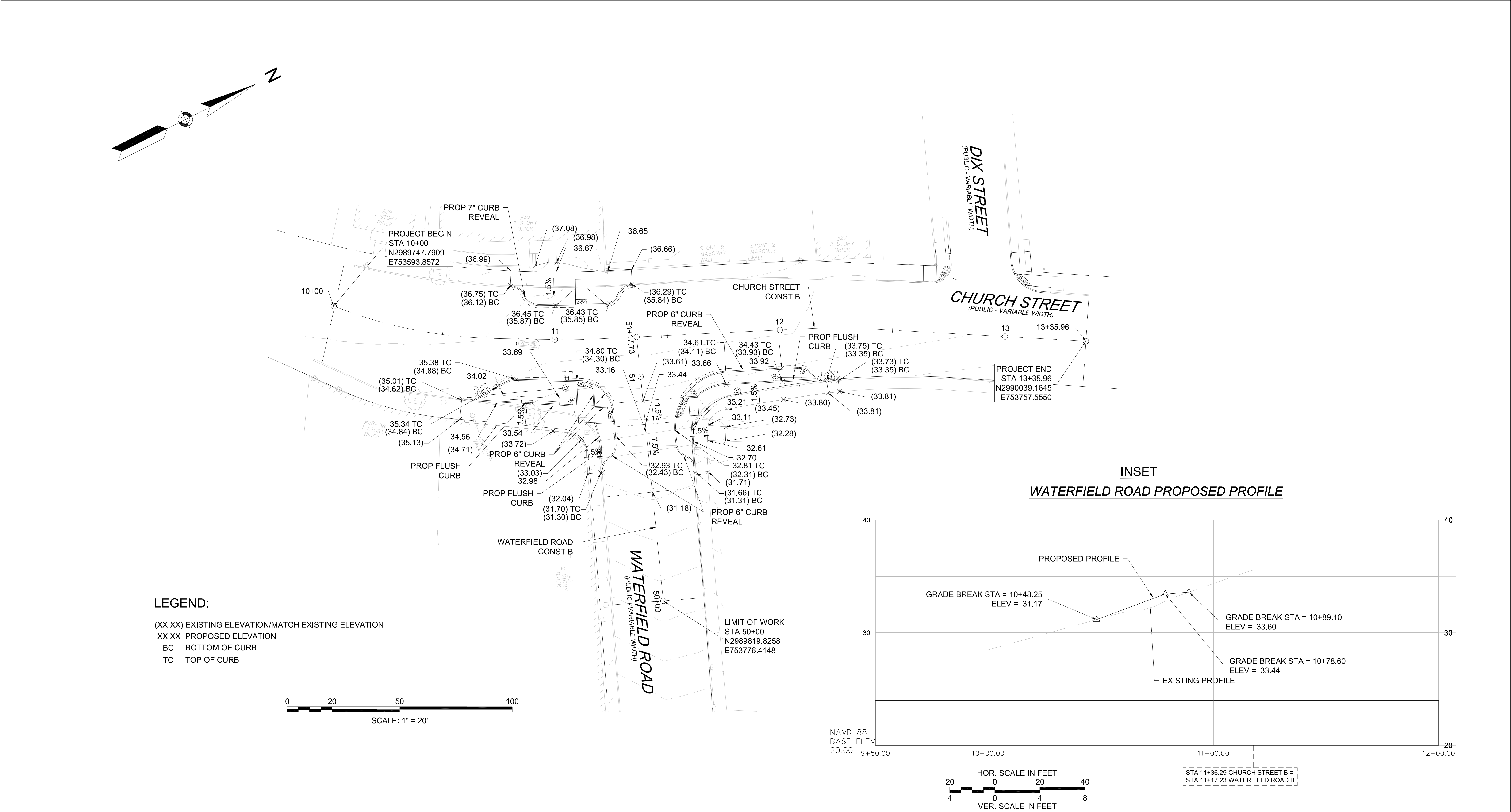
CURVE TABLE				
CURVE #	LENGTH	DIRECTION/DELTA	RADIUS	TANGENT
1	6.56	37°36'28"	10.00	3.41
2	5.46	31°16'18"	10.00	2.80
3	22.13	84°32'41"	15.00	13.64
4	7.39	60°28'09"	7.00	4.08
5	7.42	60°43'03"	7.00	4.10
6	7.92	64°48'48"	7.00	4.44
7	7.89	64°34'13"	7.00	4.42
8	8.07	66°03'27"	7.00	4.55
9	7.85	64°16'42"	7.00	4.40
10	7.03	67°06'42"	6.00	3.98
11	6.78	64°42'37"	6.00	3.80
12	40.60	93°03'03"	25.00	26.37
13	14.09	40°22'27"	20.00	7.35
14	6.90	56°27'34"	7.00	3.76
15	7.42	60°46'02"	7.00	4.10
16	6.35	14°33'48"	25.00	3.19

CHURCH STREET ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C17	10+05.87	2989751.801	753598.140	R=200.00' Δ= 19°05'50" L=66.66' T=33.64'		10+72.53	2989804.560	753638.380
L1	10+72.53	2989804.560	753638.380		N27°47'05"E 29.38'	11+01.91	2989830.557	753652.077
C18	11+01.91	2989830.557	753652.077	R=200.00' Δ= 3°53'38" L=13.59' T=6.80'		11+15.51	2989842.788	753658.000
L2	11+15.51	2989842.788	753658.000		N23°53'27"E 99.79'	12+15.29	2989934.026	753698.414
C19	12+15.29	2989934.026	753698.414	R=200.00' Δ= 5°59'06" L=20.89' T=10.46'		12+36.19	2989952.652	753707.856
L3	12+36.19	2989952.652	753707.856		N29°52'33"E 99.77'	13+35.96	2990039.164	753757.555

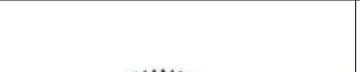



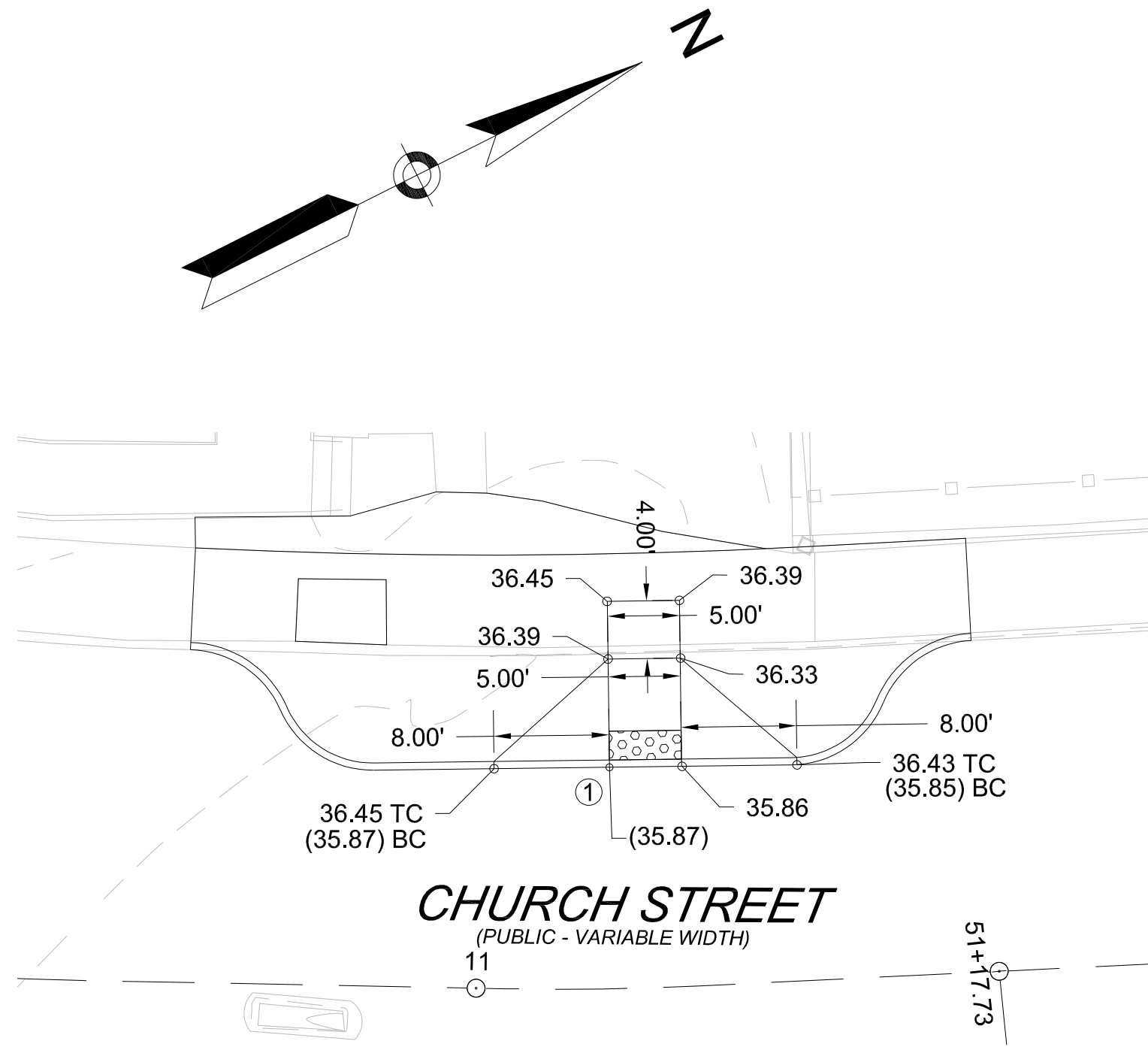
FINAL DESIGN SUBMISSION

PROFESSIONAL CERTIFICATION			REUSE OF DOCUMENTS						 <div>2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com</div>	CHURCH STREET AT WATERFIELD ROAD	CURB TIE PLAN	PROJECT NO.	60169
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE COMMONWEALTH OF MASSACHUSETTS, LICENSE NO. 49208, EXPIRATION DATE: 6/30/2022.			DSGN	KMF								DATE	AUGUST 2021
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			CHK	MAB								SHEET NO.	5 OF 19
			APVD	ELG									
		NO.	DATE	REVISION	BY	APVD							

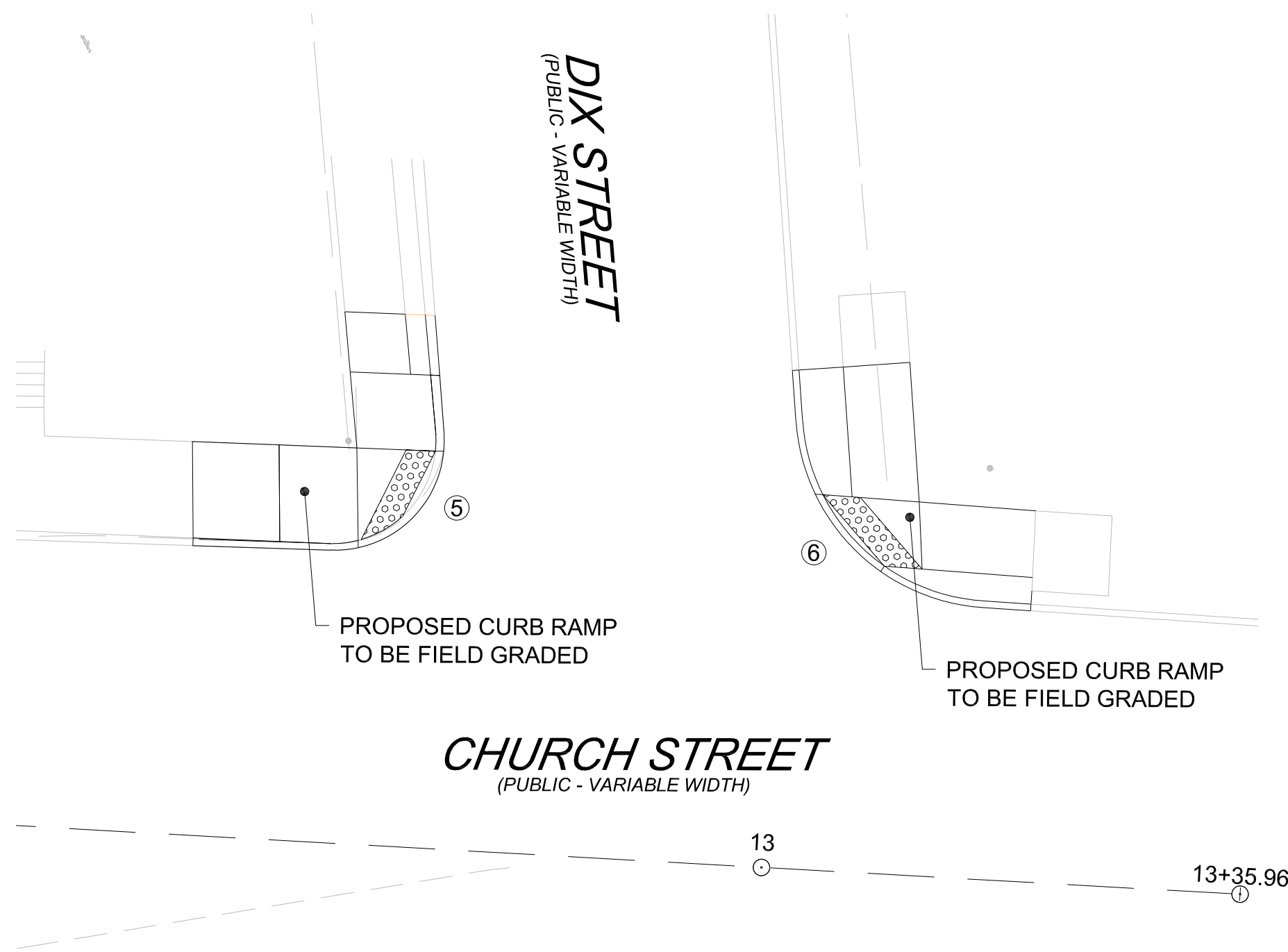


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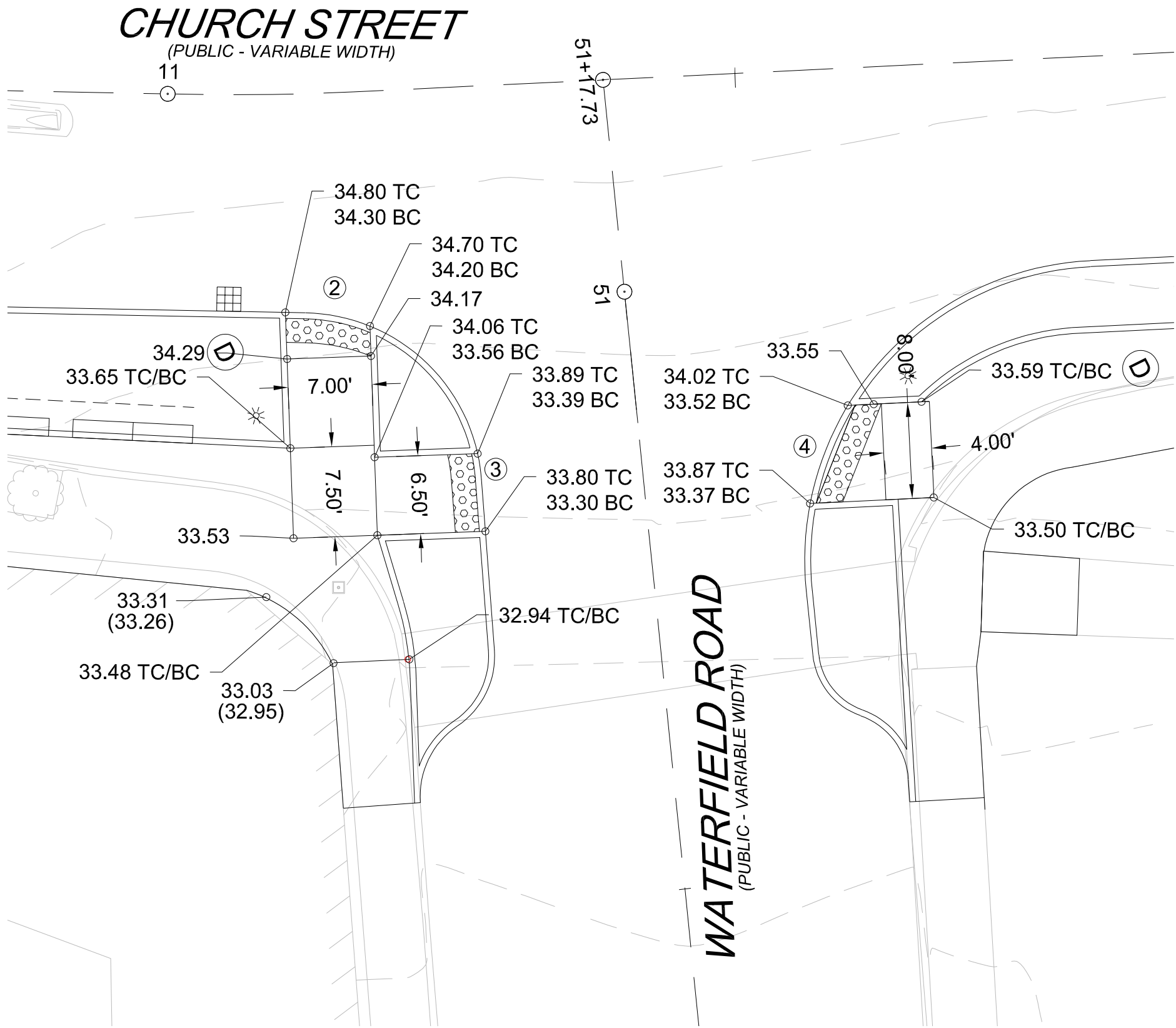
PROFESSIONAL CERTIFICATION			REUSE OF DOCUMENTS						 <div>2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com</div>	CHURCH STREET AT WATERFIELD ROAD	GRADING PLAN	PROJECT NO.	60169				
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.						DATE	AUGUST 2021										
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WCR-1



WCR-5 & WCR-6



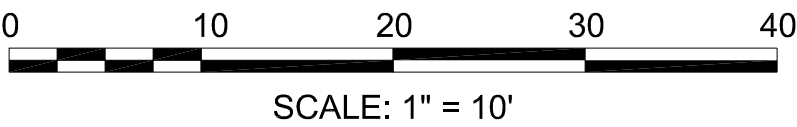
WCR-2, WCR-3, & WCR-4

NOTES:


1. MAXIMUM CURB REVEAL TO BE 7", MINIMUM CURB REVEAL TO BE 4".
2. IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER SURFACE STRUCTURES THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING CURB RAMP, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACE/COVER SHALL BE FLUSH WITH THE CURB RAMP SURFACE.
3. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 1.5%*, INCLUDING, BUT NOT LIMITED TO , TRANSITION RAMP CROSS SLOPE, LEVEL LANDING AND THE PROPOSED RAMP OPENING.
4. A CURB RAMP RUNNING SLOPE SHALL NOT EXCEED 7.5%*.
5. PROPOSED ELEVATION AT GUTTER LINE INDICATES CHANGE OF ELEVATION FROM EXISTING ROADWAY IN ORDER TO MAINTAIN POSITIVE DRAINAGE. ADJACENT SAWCUT LINE TO MATCH EXISTING ELEVATION.
6. SEE SHEET 17 FOR CURB RAMP DIMENSIONS AND STATION/OFFSET REFERENCES.
7. ±0.5% TOLERANCE FOR SIDEWALK AND WHEELCHAIR RAMP CONSTRUCTION.

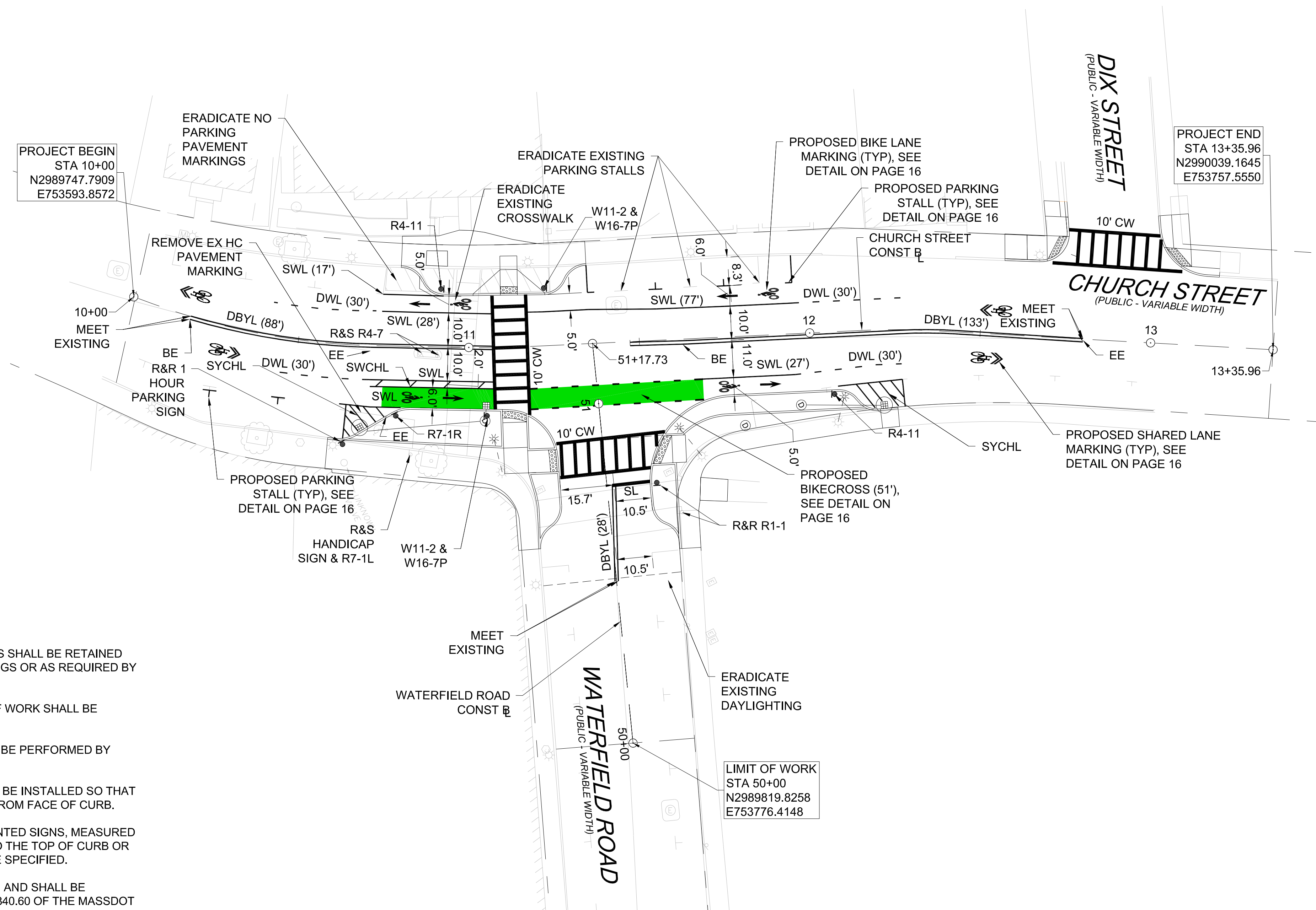
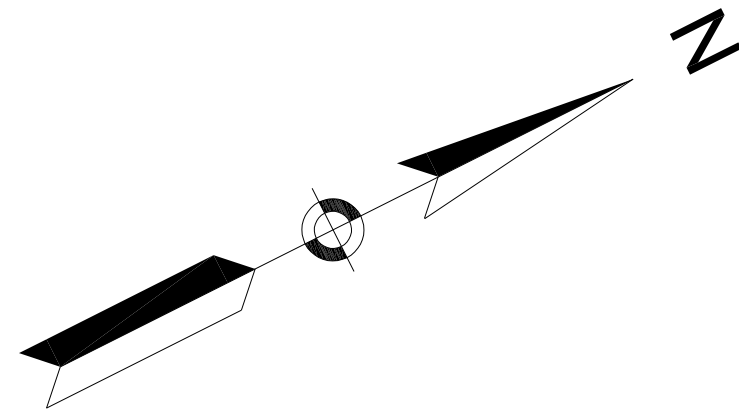
LEGEND:

- (XX.XX) EXISTING ELEVATION
XX.XX PROPOSED ELEVATION
BC BOTTOM OF CURB
TC TOP OF CURB
Ⓢ WHEELCHAIR RAMP IDENTIFIER



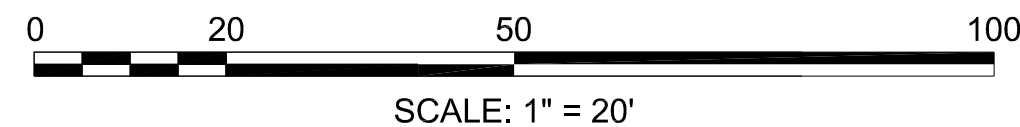
FINAL DESIGN SUBMISSION

PROFESSIONAL CERTIFICATION			REUSE OF DOCUMENTS						<div><div>TOOLE</div><div>DESIGN</div></div> <div>2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com</div>		CHURCH STREET AT WATERFIELD ROAD		PROJECT NO.		
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE COMMONWEALTH OF MASSACHUSETTS, LICENSE NO. 49208, EXPIRATION DATE: 6/30/2022.			ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.										60169		
			DSGN	KMF											DATE
			DR	CBK											AUGUST 2021
			CHK	MAB											DRAWING NO.
												WCR.01			
													SHEET NO.		
													7 OF 19		







NOTES:

- FOR CONSTRUCTION DETAILS SEE SHEETS 16.
- ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS OR AS REQUIRED BY THE ENGINEER.
- ALL PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE THERMOPLASTIC.
- PAVEMENT MARKINGS TO BE ERADICATED MUST BE PERFORMED BY APPROVED METHOD.
- ALL SIGNS (BESIDES OBJECT MARKER SIGNS) TO BE INSTALLED SO THAT THE NEAR EDGE OF THE SIGN WILL BE MIN. 18" FROM FACE OF CURB.
- THE MINIMUM MOUNTING HEIGHT OF POST-MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF CURB OR SIDEWALK SHALL BE 7 FEET UNLESS OTHERWISE SPECIFIED.
- ALL SIGN ASSEMBLY POSTS SHALL BE P-5 POSTS AND SHALL BE INSTALLED IN ACCORDANCE WITH SUBSECTION 840.60 OF THE MASSDOT SUPPLEMENTAL SPECIFICATIONS, DATED 2020.

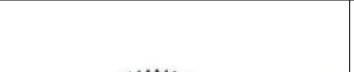



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PROFESSIONAL CERTIFICATION			REUSE OF DOCUMENTS						<div><div>TOOLE</div><div>DESIGN</div></div> <div>2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com</div>	CHURCH STREET AT WATERFIELD ROAD	PROJECT NO.		60169
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.						DATE		AUGUST 2021					
DSGN	KMF						DRAWING NO.				PM.01		
DR	CBK						SHEET NO.				8 OF 19		
CHK	MAB												
APVD	ELG		NO.	DATE	REVISION		BY	APVD					

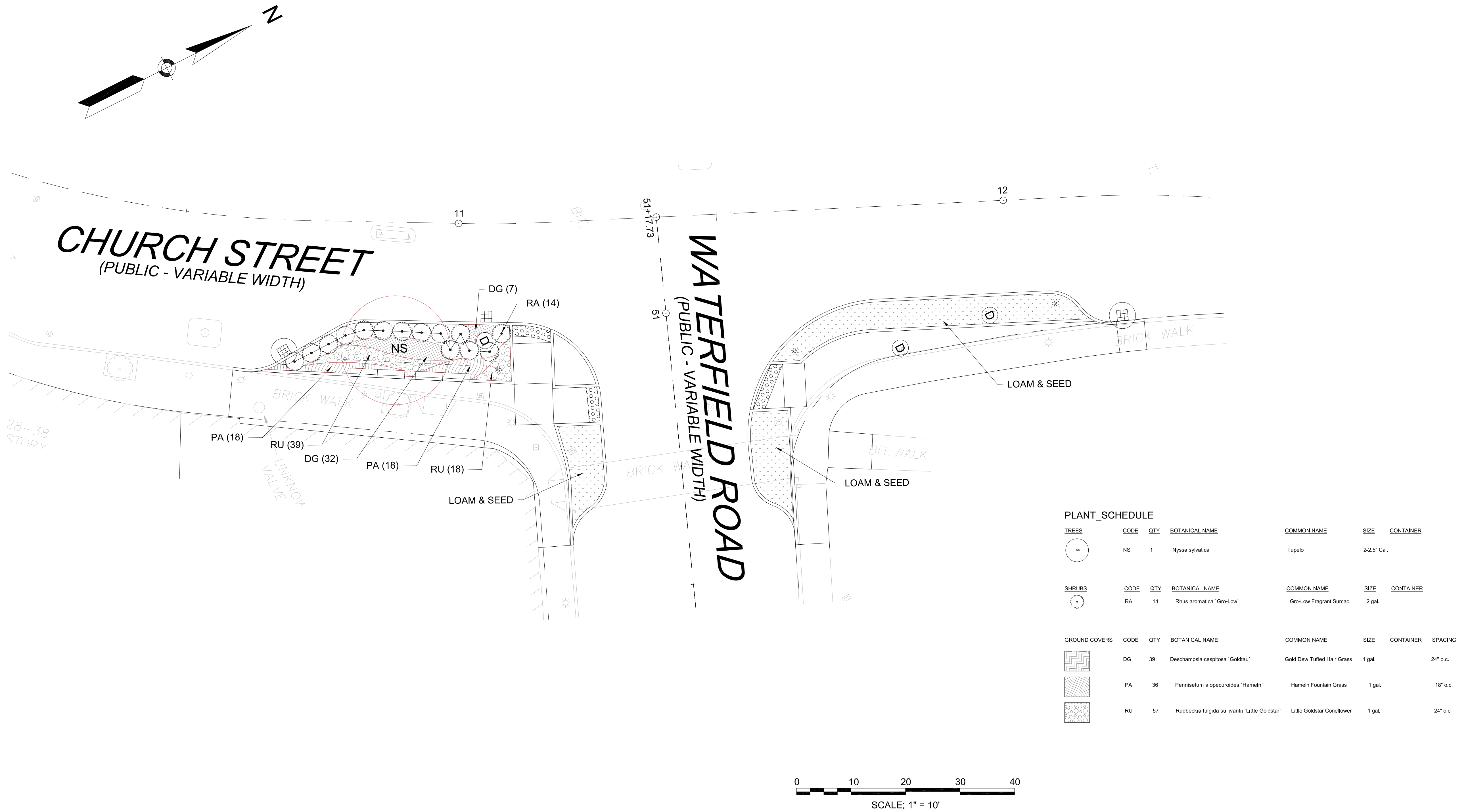
ID NUMBER	SIZE OF SIGN (in.)		LEGEND	TEXT DIMENSIONS (in.)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACKGROUND	LEGEND	BORDER			
R4-11	30	30		SEE MUTCD STANDARD DETAIL			2	WHITE	BLACK	BLACK	P-5 2 REQ'D	6.25	12.50
R7-1R	12	18					1	WHITE	RED	RED	P-5 REQ'D	1.50	1.50
W11-2	30	30					2	FYG	BLACK	BLACK	P-5 2 REQ'D	6.25	12.50
W16-7P	24	12					2	FYG	BLACK	BLACK	MOUNT 2 W/ W11-2	2.00	4.00

FINAL DESIGN SUBMISSION

PROFESSIONAL CERTIFICATION			REUSE OF DOCUMENTS							2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com	CHURCH STREET AT WATERFIELD ROAD	SIGN SUMMARY		PROJECT NO.		60169	
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.								DATE						AUGUST 2021			
DSGN	KMF													DRAWING NO.		PM.02	
DR	CBK													SHEET NO.		9 OF 19	
CHK	MAB																
APVD	ELG		NO.	DATE	REVISION			BY	APVD								

GENERAL NOTES:

1. THIS PLAN IS BASED UPON AN ON-THE-GROUND SURVEY PERFORMED BY BSC GROUP, INC. IN SEPTEMBER, 2019.
2. HORIZONTAL DATUM IS THE NORTH AMERICAN DATUM OF 1983 (NAD 83) AS DERIVED FROM GPS SURVEY PERFORMED BY BSC GROUP, INC.
3. VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AS DERIVED FROM GPS SURVEY PERFORMED BY BSC GROUP, INC.



FINAL DESIGN SUBMISSION

PROFESSIONAL CERTIFICATION			REUSE OF DOCUMENTS						PROJECT NO.	
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE COMMONWEALTH OF MASSACHUSETTS, LICENSE NO. 49208, EXPIRATION DATE: 6/30/2022.			ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.						60169	
			DSGN	KMF						DATE
			DR	CBK						AUGUST 2021
			CHK	MAB						DRAWING NO.
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				NO.	DATE	REVISION	BY	APVD	SHEET NO.	
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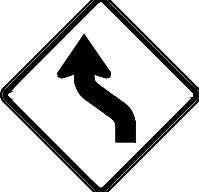
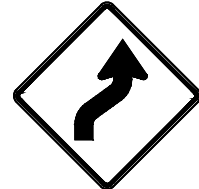







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2 OLIVER STREET, SUITE 305
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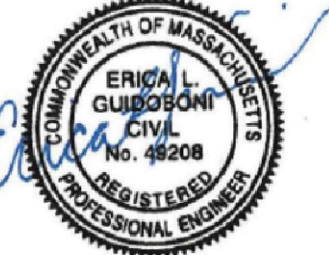
CHURCH STREET AT
WATERFIELD ROAD

PLANTING PLAN

TRAFFIC SIGN SUMMARY													
IDENTIFICATION NUMBER	SIZE OF SIGN (in)		LEGEND	TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (SF)	TOTAL AREA (SF)	
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR		BACK-GROUND	LEGEND	BORDER			
MA-R2-10a	48	36		MASSDOT STANDARD SIGN			4	FL. ORANGE	WHITE	BLACK	BLACK	12.00	48.00
MA-R2-10e	36	48					4	FL. ORANGE	WHITE	BLACK	BLACK	12.00	48.00
R9-9	30	18		SEE 2009 MUTCD FOR DIMENSIONS			2	WHITE		BLACK	BLACK	3.75	7.50
R9-11aL	24	12					1	WHITE		BLACK	BLACK	2.00	2.00
R9-11aR	24	12					1	WHITE		BLACK	BLACK	2.00	2.00
W1-4L	36	36					2	FL. ORANGE		BLACK	BLACK	9.00	18.00
W1-4R	36	36					2	FL. ORANGE		BLACK	BLACK	9.00	18.00
W5-1	36	36					2	FL. ORANGE		BLACK	BLACK	9.00	18.00
W11-2	30	30					4	FYG		BLACK	BLACK	6.25	25.00
W16-7pL	24	12					4	FYG		BLACK	BLACK	2.00	8.00
W20-1	36	36					4	FL. ORANGE		BLACK	BLACK	9.00	36.00
W20-4	36	36					4	FL. ORANGE		BLACK	BLACK	9.00	36.00
W20-7a	36	36					4	FL. ORANGE		BLACK	BLACK	9.00	36.00
W21-5a	36	36					4	FL. ORANGE		BLACK	BLACK	9.00	36.00

PROFESSIONAL CERTIFICATION

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REUSE OF DOCUMENTS

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DSGN	KMF				NO.	DATE	REVISION	BY	APVD
DR	CBK								
CHK	MAB								
APVD	ELG								

TOOLE DESIGN

2 OLIVER STREET, SUITE 305
BOSTON, MA 02109
PHONE: 617.619.9910
FAX: 301.927.2800
www.tooledesign.com


CHURCH STREET AT
WATERFIELD ROAD

PROJECT NO.
60169

DATE
AUGUST 2021

DRAWING NO.
TTCP.01

SHEET NO.
11 OF 19

TRAFFIC SIGN SUMMARY													
IDENTIFICATION NUMBER	SIZE OF SIGN (in)		LEGEND	TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (SF)	TOTAL AREA (SF)	
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR		BACK-GROUND	LEGEND	BORDER			
MA-W20-7b	36	36		MASSDOT STANDARD SIGN			4	FL. ORANGE		BLACK	BLACK	9.00	36.00

NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED WITH THE MUTCD.

2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.

3. TEMPORARY CONSTRUCTION SIGNING, AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.

4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OR TRAFFIC.

5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SE FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).

6. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.

7. THE FIRST FIVE PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.

8. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.

9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.

10. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.

11. MINIMUM LANE WIDTH IS TO BE 11 FEET (3.3M) UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.

12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.

NOTES:

1. ALL CONSTRUCTION SIGNING, DRUMS, BARRICADES AND OTHER DEVICES SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AS AMENDED.

2. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS. THE FIRST TEN DRUMS SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS. MAX SPACING OF DRUMS/CONES IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.

3. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.

4. A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON TWO WAY STREETS SHALL BE MAINTAINED AT ALL TIMES. EXCEPT AT PEAK HOURS, TRAFFIC DURING WORKING HOURS MAY BE REDUCED TO ONE LANE UNDER POLICE CONTROL FOR SHORT TIME PERIODS WHEN REQUIRED FOR THE WORK, AS APPROVED BY MASSDOT.

5. GRADE SEPARATIONS IN EXCESS OF 2" DURING NON-WORKING HOURS SHALL REQUIRE DELINEATION BY USE OF DRUMS.

6. EXCAVATION EDGES IN EXCESS OF 4" DEEP SHALL BE PROTECTED DURING NON-WORKING HOURS BY BACKFILLING WITH A WEDGE OF GRAVEL OR SOIL TO COMPACTED 4:1 SLOPE.

7. 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED AT ALL TIMES.

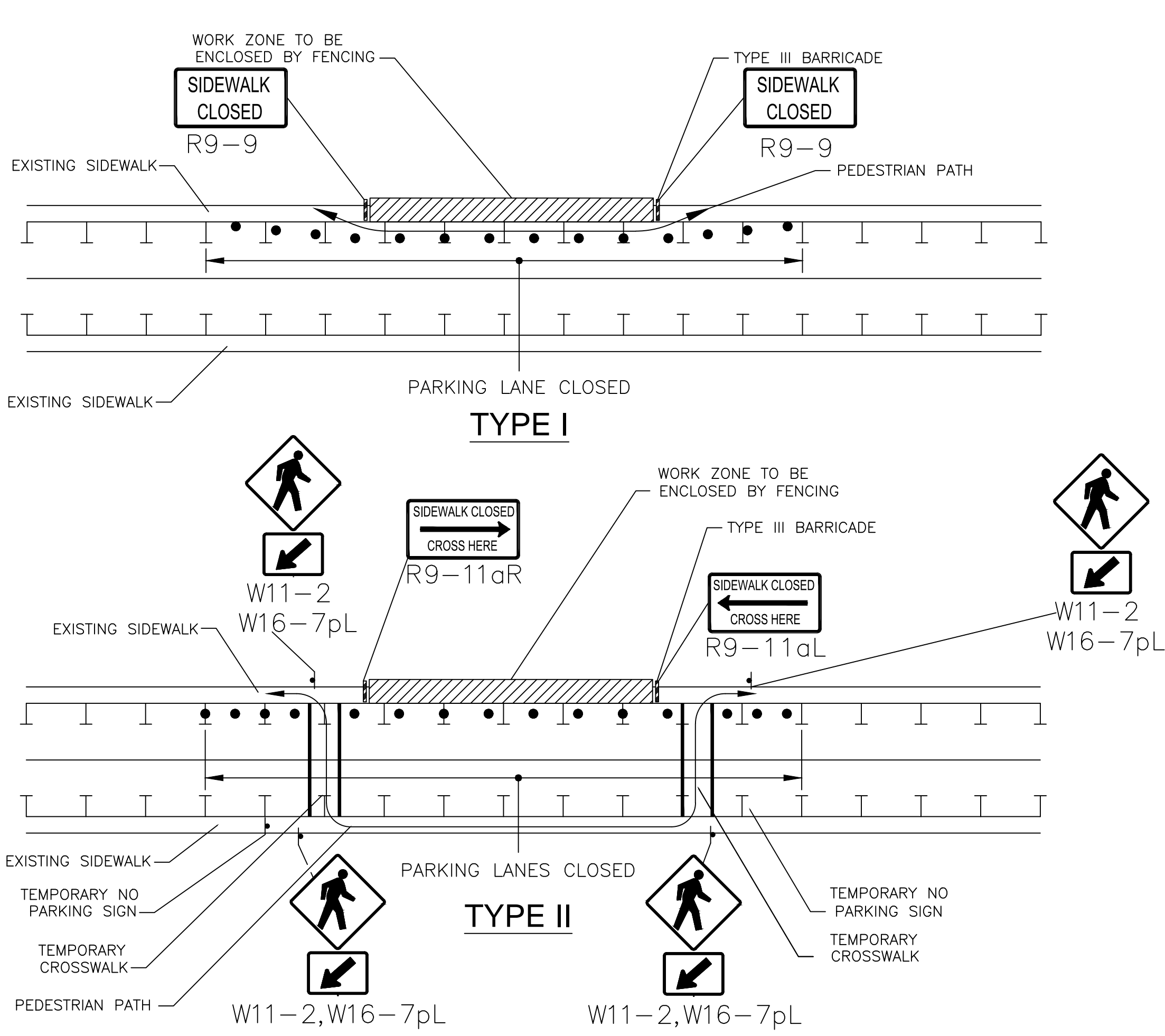
8. NON-ESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.

9. FLAGGERS MAY NOT BE USED FOR TRAFFIC CONTROL AT INTERSECTIONS.

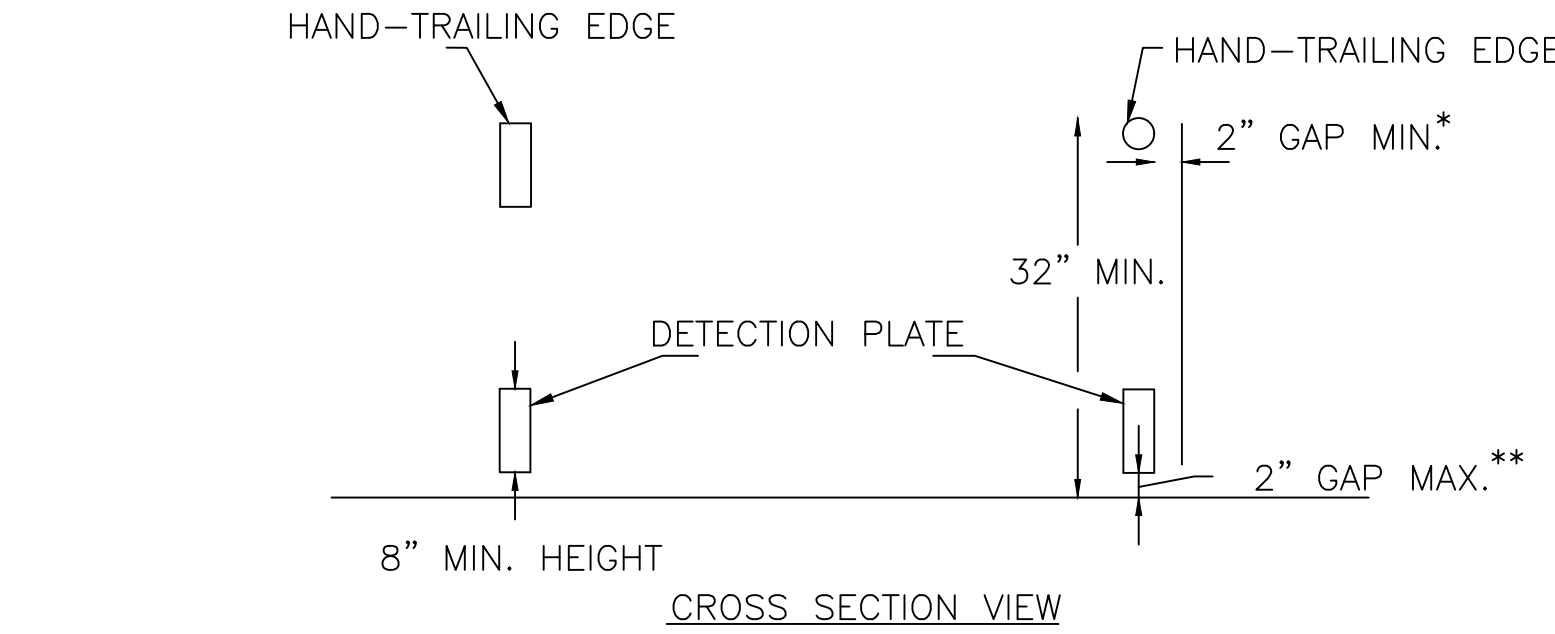
10. SEE SHEET 21 FOR PEDESTRIAN TRAFFIC CONTROL DETAILS.

11. CONTRACTOR SHALL MAINTAIN ADA-COMPLIANT PEDESTRIAN ACCESS AT ALL TIMES, SPECIFICALLY INCLUDING PEDESTRIAN GUIDANCE SYSTEMS AT WORK ZONES. ACCESS SHALL BE MAINTAINED ALONG ALL SIDEWALKS AND CROSSWALKS, TO ALL ABUTTERS, AND TO ALL MBTA BUS STOPS OR TRAIN STATIONS. ANY PEDESTRIAN DETOURS SHALL INCLUDE A FULLY ADA-COMPLIANT PEDESTRIAN DETOUR ROUTE WITH PROPER BARRICADES, RAILINGS, RAMPS, AND SIGNAGE.

FINAL DESIGN SUBMISSION

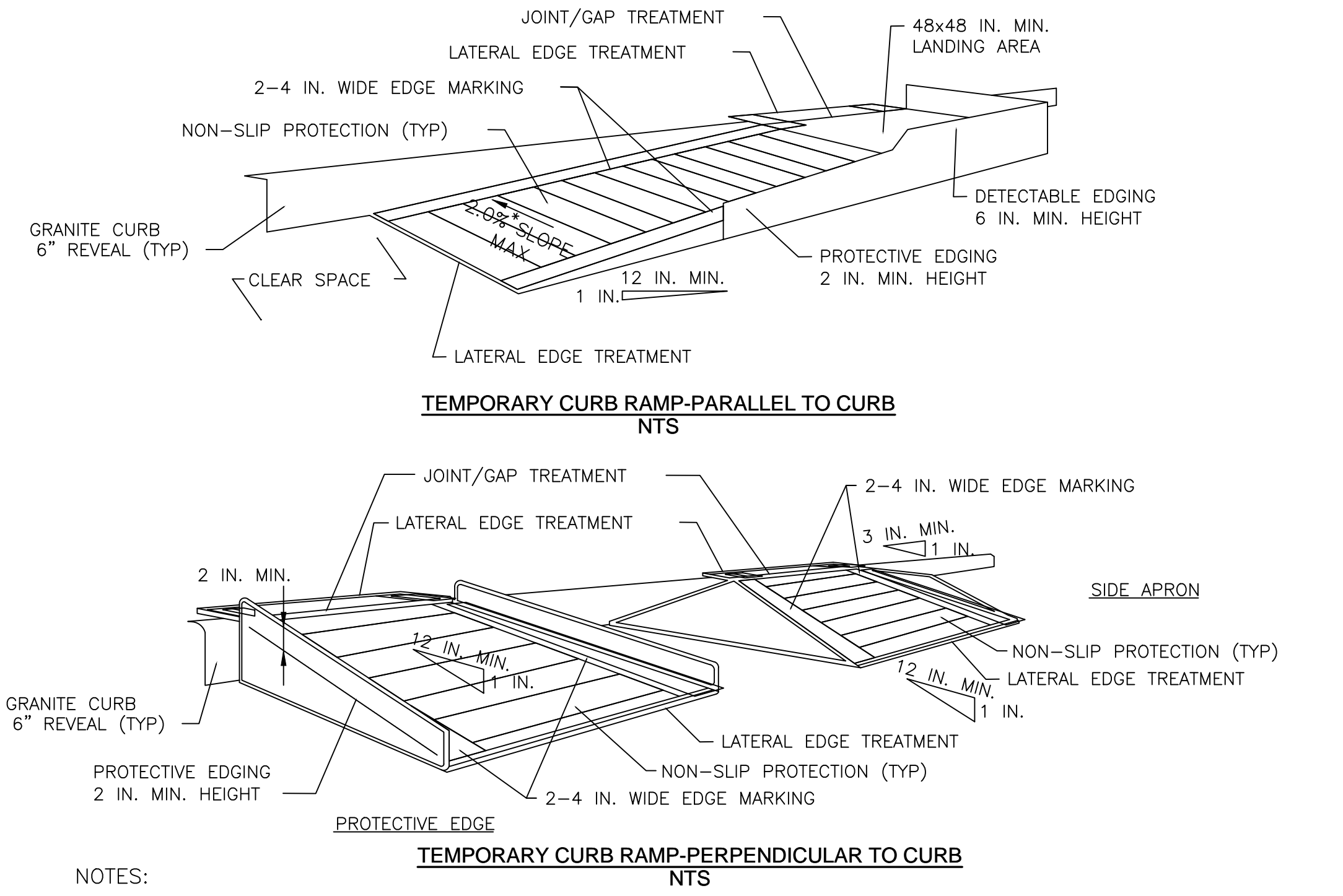


- NOTES**
1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
 2. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.
 3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
 4. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHOULD BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER. TEMPORARY CURB RAMPS WILL BE REQUIRED AT ALL TEMPORARY CROSSWALK LOCATIONS.
 5. BYPASS IS TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER.
 6. THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THIS WALKWAY EXCEEDS 200 FEET THEN A 5 FOOT X 5 FOOT PASSING ZONE. (FOR SHORT TERM SETUPS < 10 HOURS, THIS CONDITION MAY BE WAIVED. A NOTE WOULD NEED TO BE INCLUDED IN THE TTCP THAT STATES HOW THE CONTRACTOR SHOULD ADDRESS THIS ISSUE.)

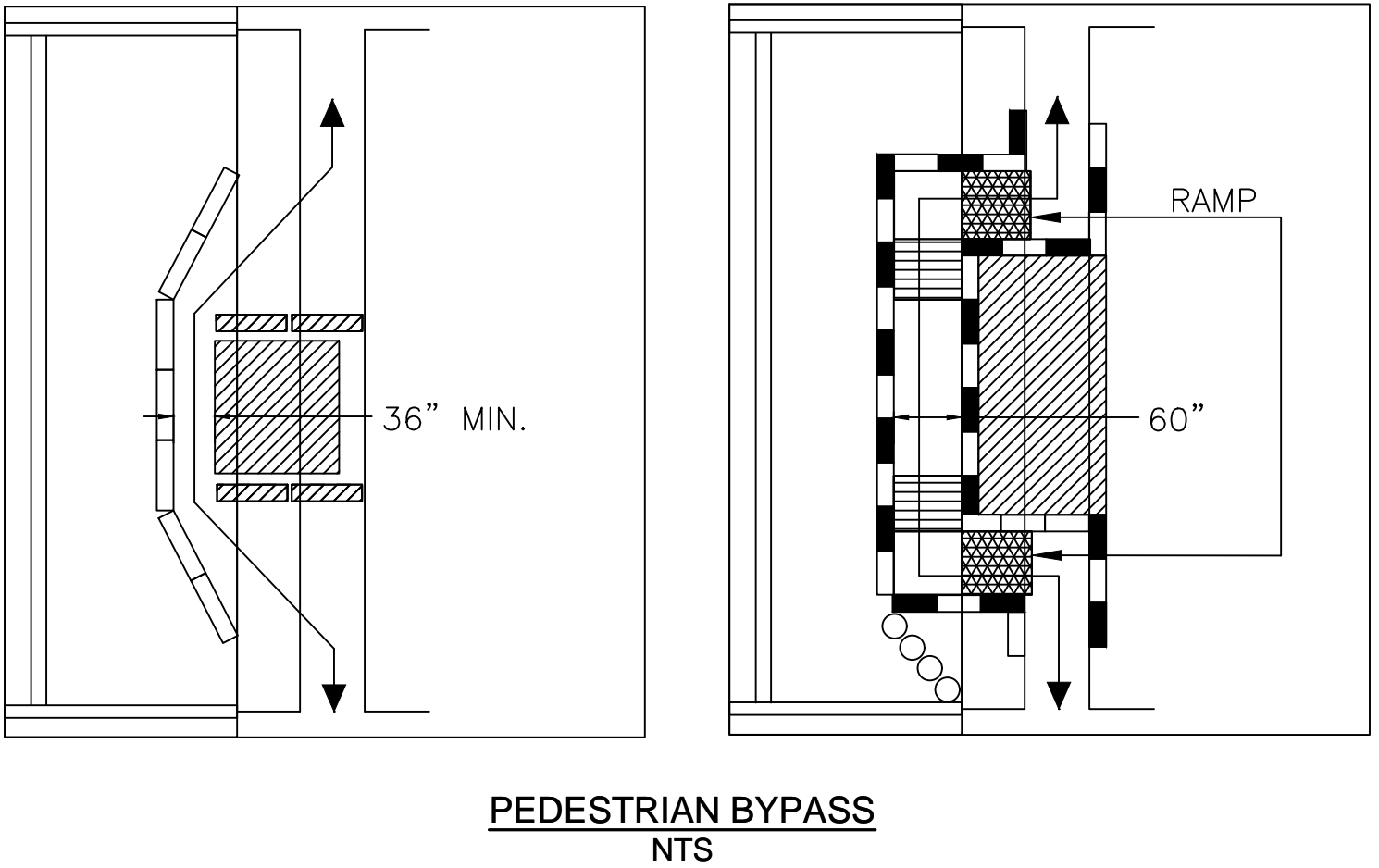
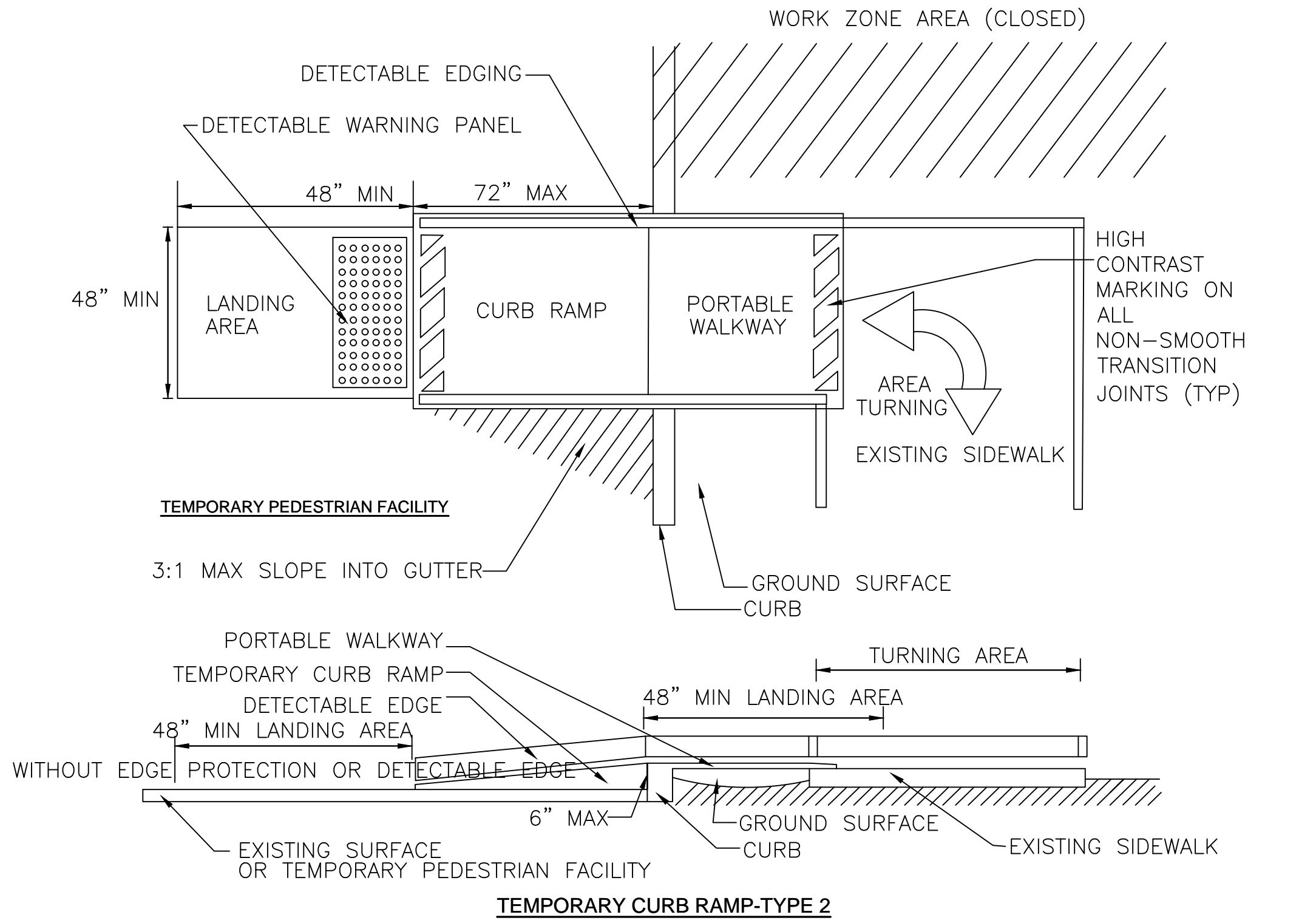


PEDESTRIAN CHANNELIZING DEVICE

- NOTES:**
- * THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND-TRAILING EDGE AND ITS SUPPORT.
 - ** A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.



- NOTES:**
1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
 2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
 3. DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
 4. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
 5. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
 6. THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR 2 TO 4 IN. WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.
 7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
 8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
 9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.



- PEDESTRIAN BYPASS**
- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, temporary facilities shall be provided and they shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.
 - A pedestrian channelizing device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
 - When used, temporary ramps shall comply with Americans with Disabilities Act (see Figures Ped-1 & Ped-2).
 - The alternate pathway should have a smooth continuous hard surface for the entire length of the temporary pedestrian facility.
 - The protective requirements of a TTC situation have priority in determining the need for temporary traffic barriers and their use in this situation should be based on engineering judgment.
 - Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.

AUDIBLE DEVICES

For long term sidewalk closures (at a minimum overnight) a form of speech messaging for pedestrians with visual disabilities shall be provided. Audible information devices such as detectable barriers or barricades and other passive pedestrian activation (motion activated) devices should be considered for these cases. These audible devices can be mountable or stand alone.

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			DR	CBK										TEMPORARY TRAFFIC CONTROL PLAN		DRAWING NO.		TTCP.02	
			CHK	MAB												SHEET NO.		12 OF 19	
					APVD	ELG	NO.	DATE					REVISION		BY	APVD			

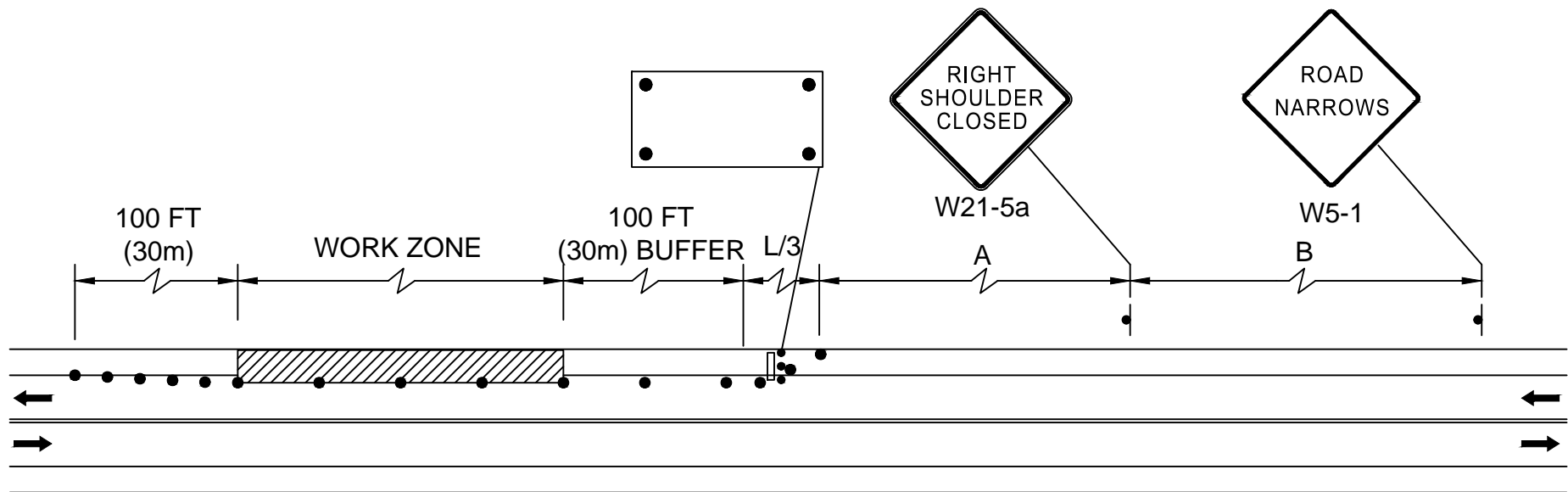
FORMULAS FOR DETERMINING TAPER LENGTHS

SPEED LIMIT (S)	TAPER LENGTH (L) FEET
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$

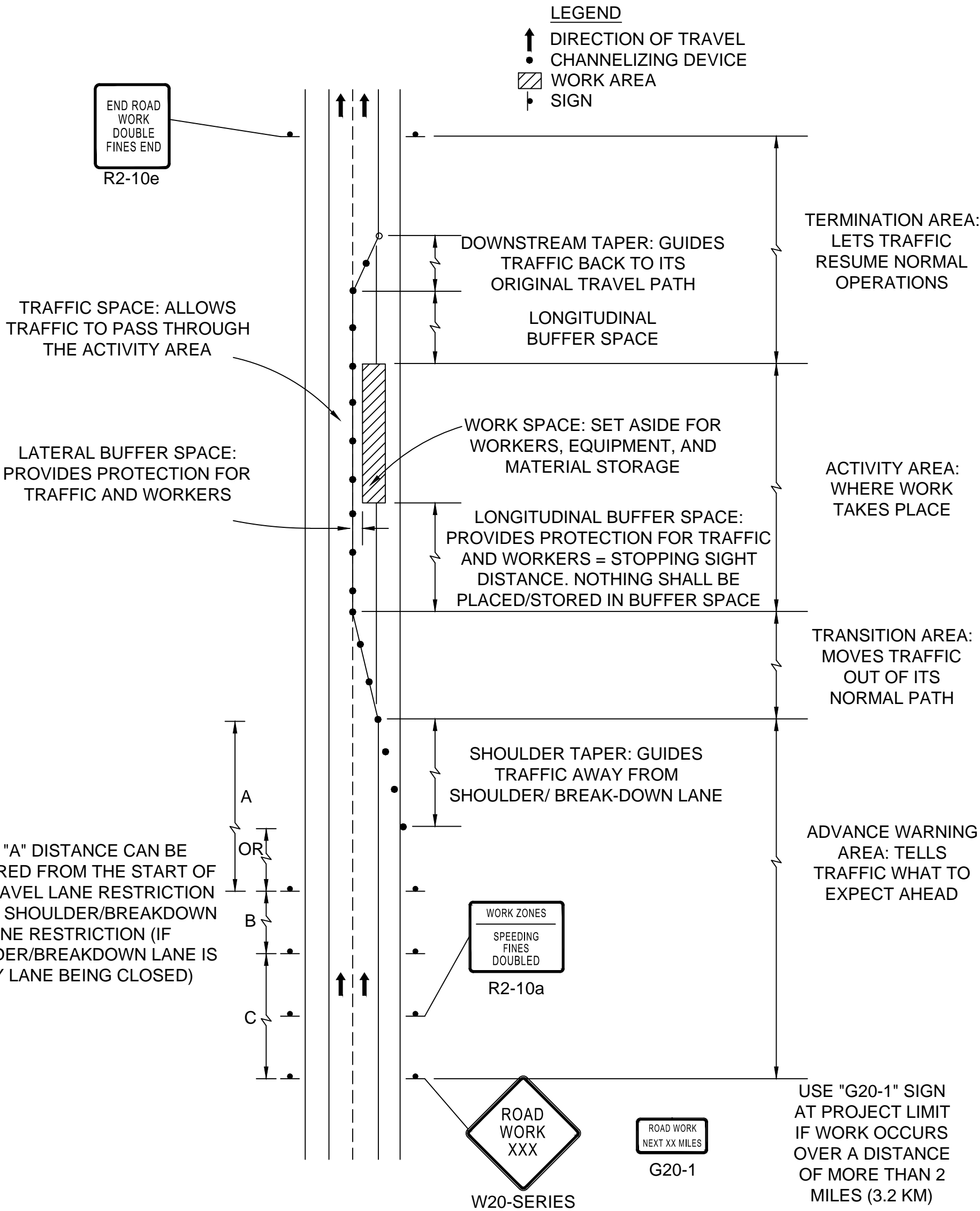
WHERE: L = TAPER LENGTH IN FEET (METERS)

W = WIDTH OF OFFSET IN FEET (METERS)

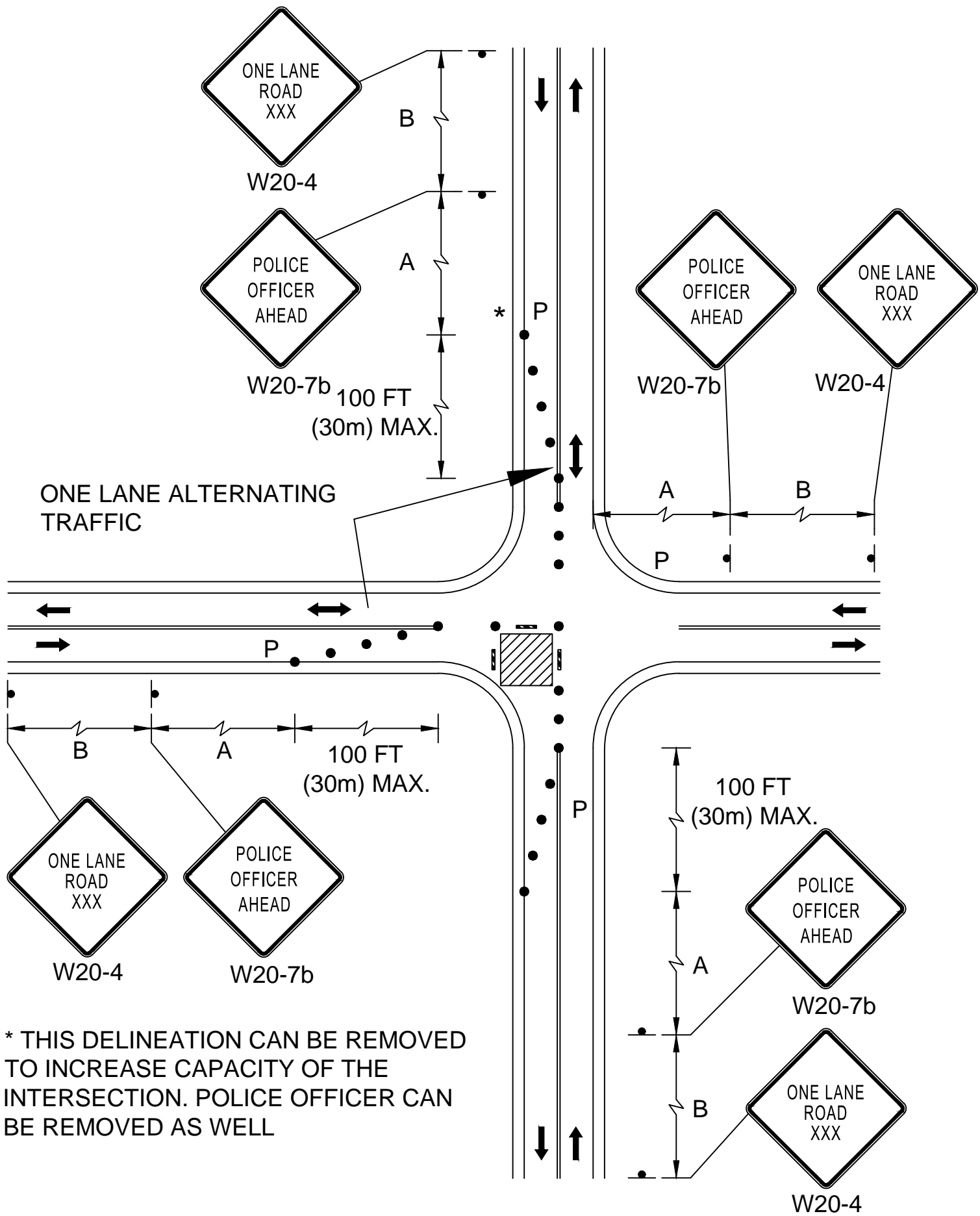
S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH



TWO LANE ROAD SHOULDER CLOSED
NTS



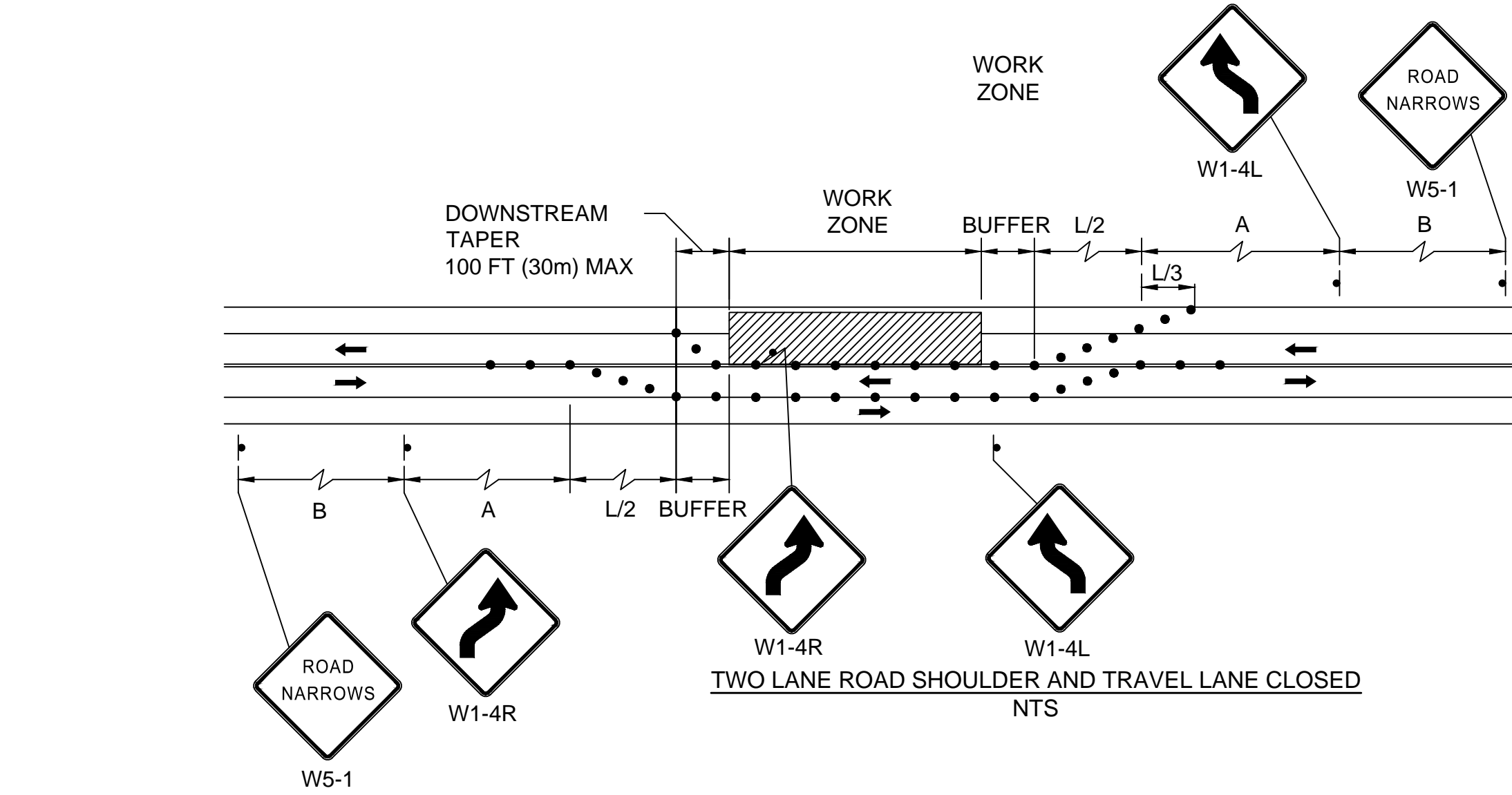
COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL (TTC) ZONE



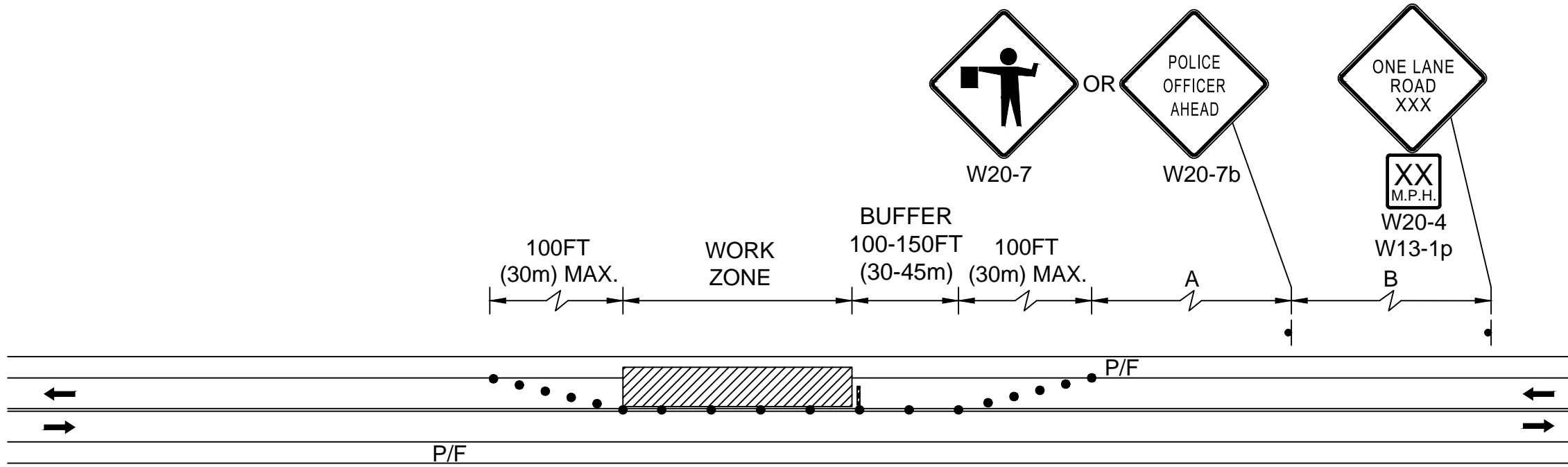
SINGLE LANE APPROACH ONE QUADRANT CLOSURE

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

TYPE OF TAPER	TAPER LENGTH (L)*
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT MIN. 100 FT MAX.
DOWNSTREAM TAPER	50 FT MIN. 100 FT MAX. PER LANE



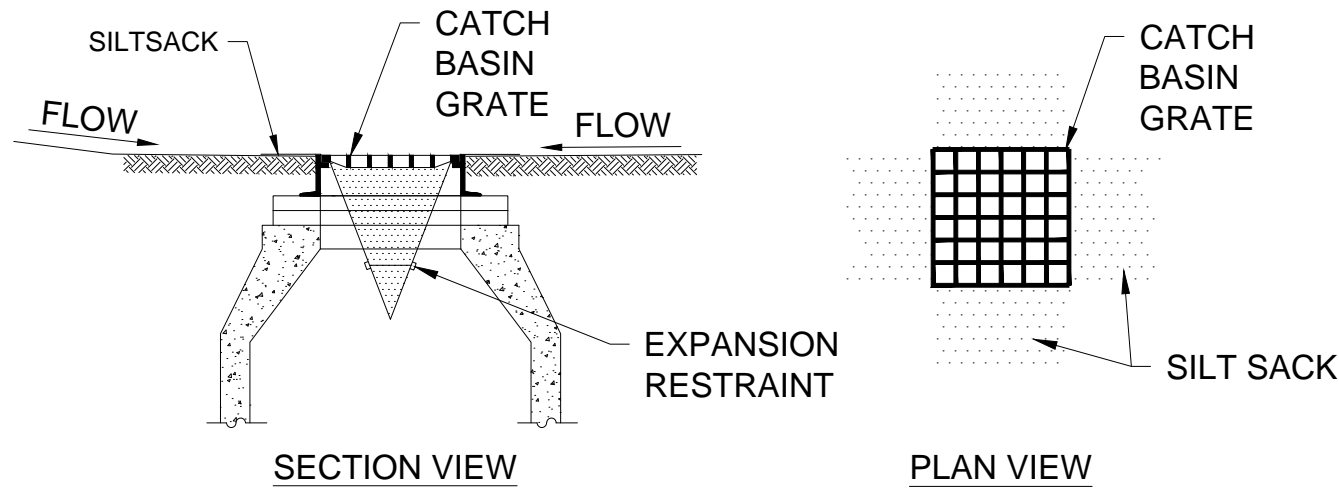
TWO LANE ROAD SHOULDER AND TRAVEL LANE CLOSED
NTS



TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC
NTS

FINAL DESIGN SUBMISSION

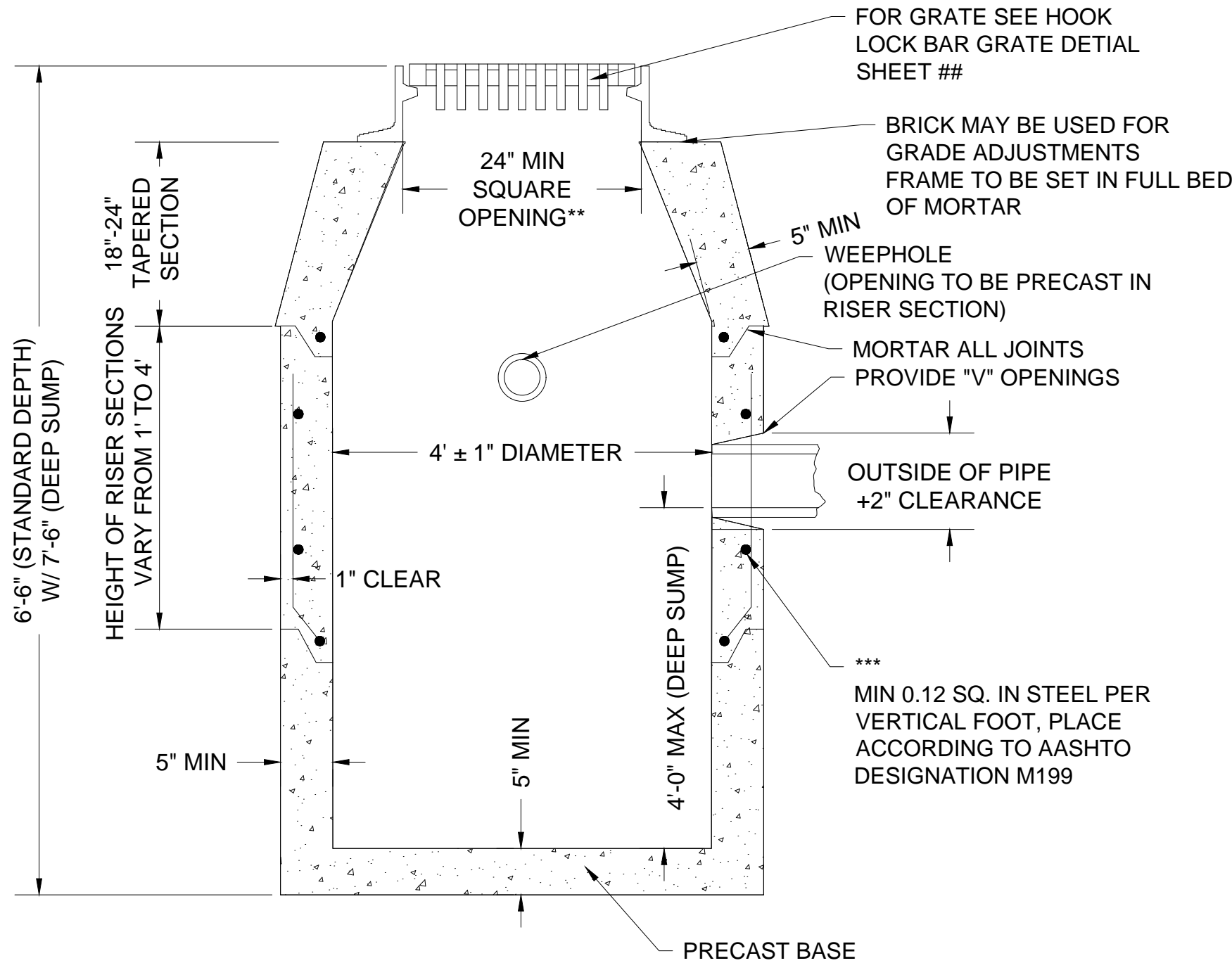
PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE COMMONWEALTH OF MASSACHUSETTS, LICENSE NO. 49208, EXPIRATION DATE: 6/30/2022.		REUSE OF DOCUMENTS ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.				<div> <div>TOOLE</div> <div>DESIGN</div> </div> <div> 2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com </div>	CHURCH STREET AT WATERFIELD ROAD	TEMPORARY TRAFFIC CONTROL PLAN	PROJECT NO. 60169
									DATE AUGUST 2021
									DRAWING NO. TTCP.03
									SHEET NO. 13 OF 19



NOTES:

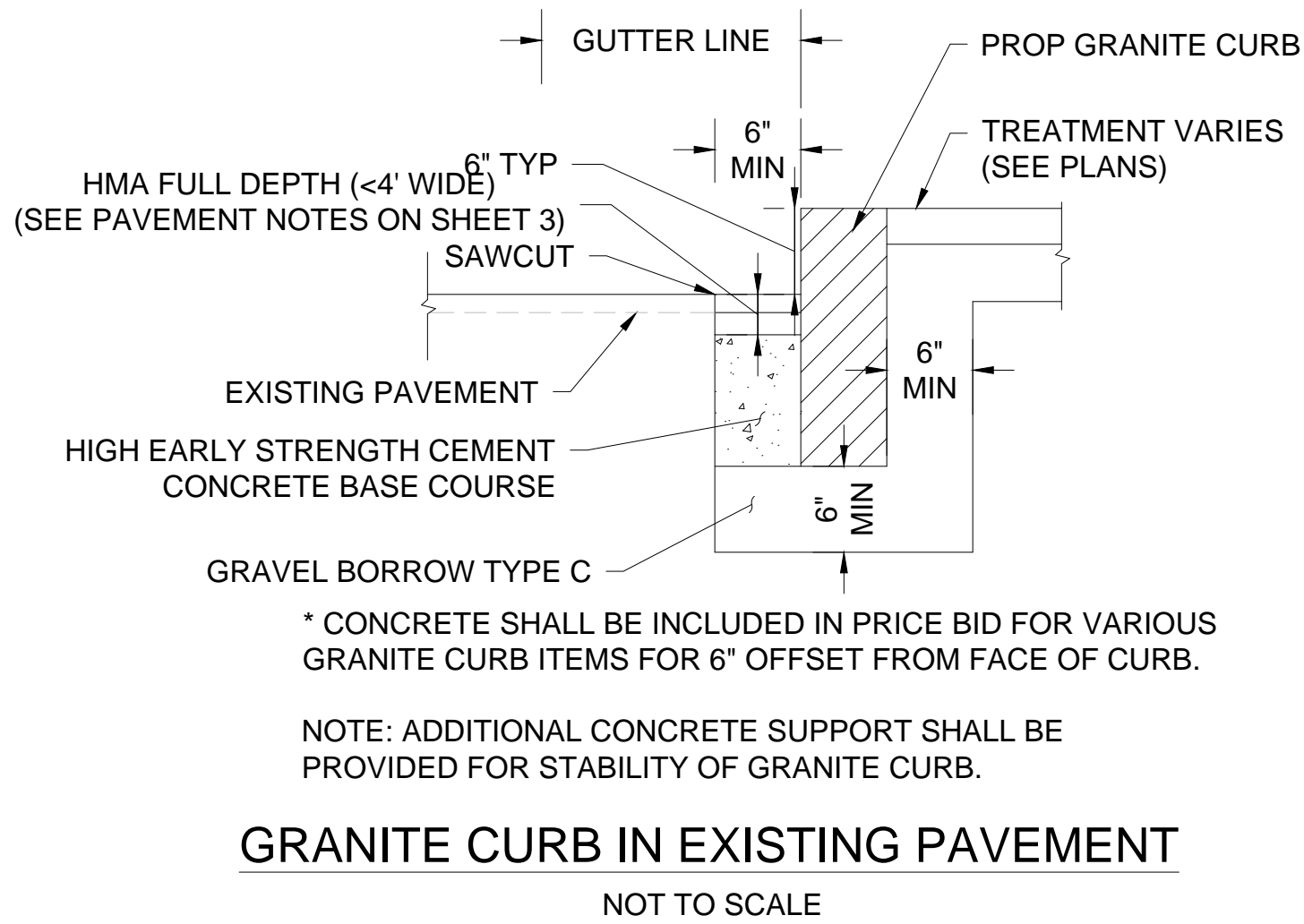
1. INSTALL SILT SACK IN EXISTING CATCH BASINS BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. GRATE TO BE PLACED OVER SILT SACK.
3. SILTSACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

INLET PROTECTION SILT SACK IN CATCH BASIN
NOT TO SCALE

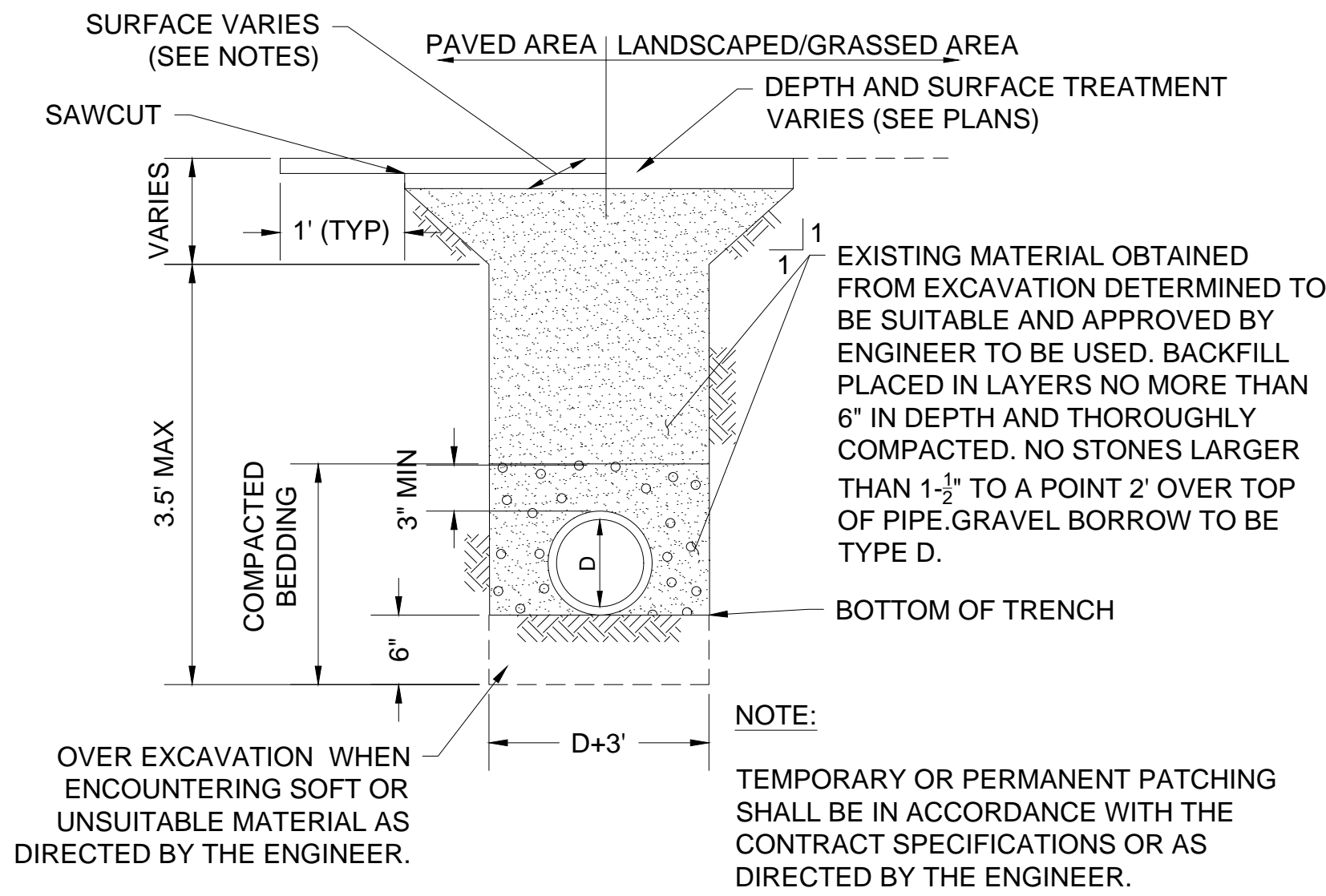


- * MINIMUM DEPTH OF SUMP TO BE 4 FT
- ** WHEN A CURB INLET IS INSTALLED, THE OPENING IS TO BE 24\"/>
- *** REINFORCING STEEL BASED ON A WALL THICKNESS OF 5"

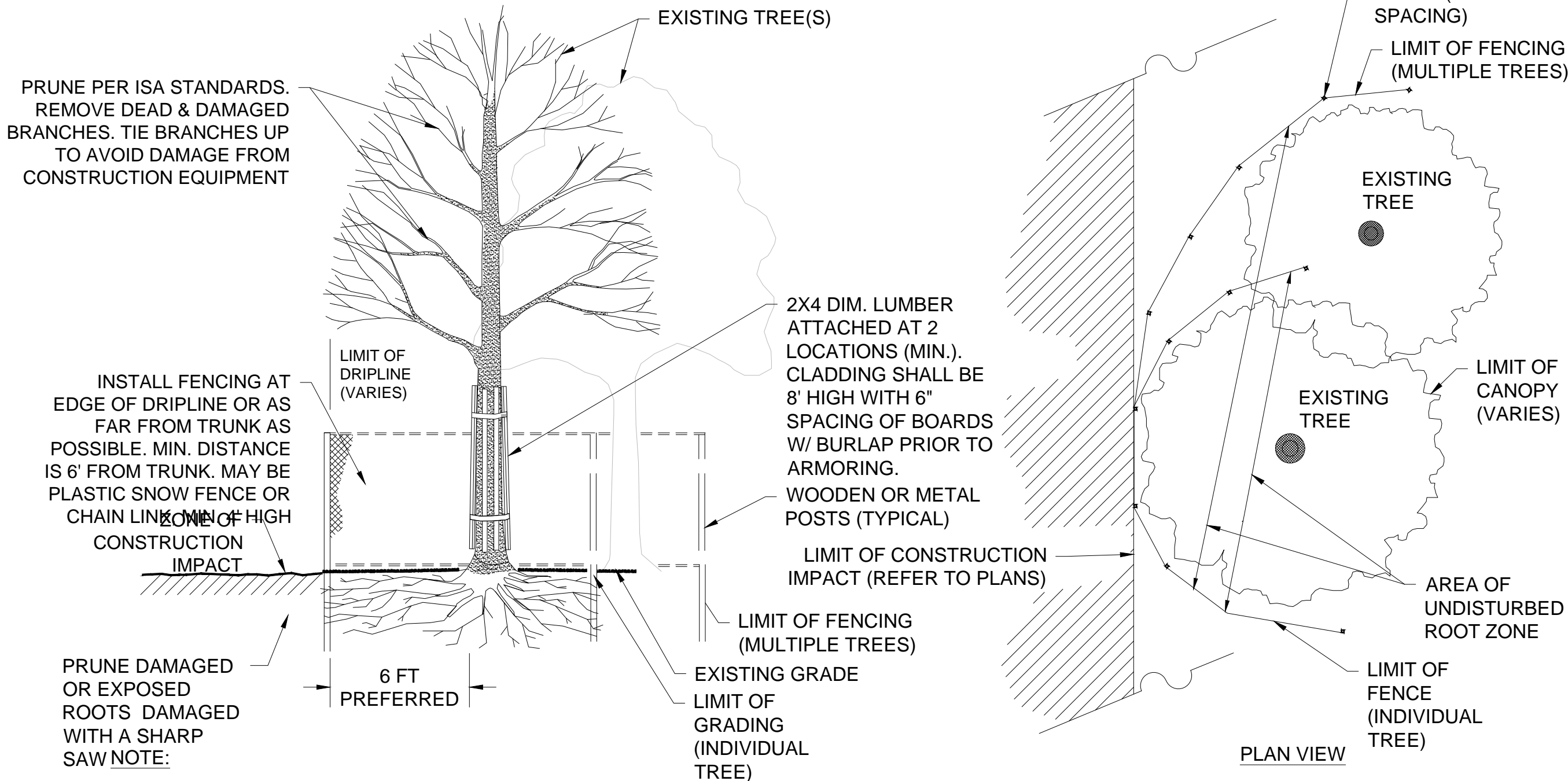
PRECAST CONCRETE CATCH BASIN
NOT TO SCALE



GRANITE CURB IN EXISTING PAVEMENT
NOT TO SCALE




DRAINAGE TRENCH
NOT TO SCALE



TREE PROTECTION - EXISTING TREE
NOT TO SCALE

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			DSGN	KMF						
			DR	CBK						
			CHK	MAB						
APVD	ELG									
		NO.	DATE	REVISION		BY	APVD	CONSTRUCTION DETAILS		
								14 OF 19		

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CHURCH STREET AT

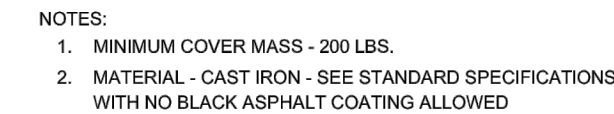
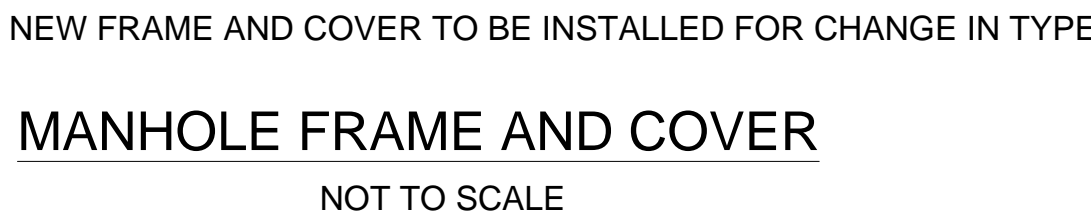
WATERFIELD ROAD

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DESIGN

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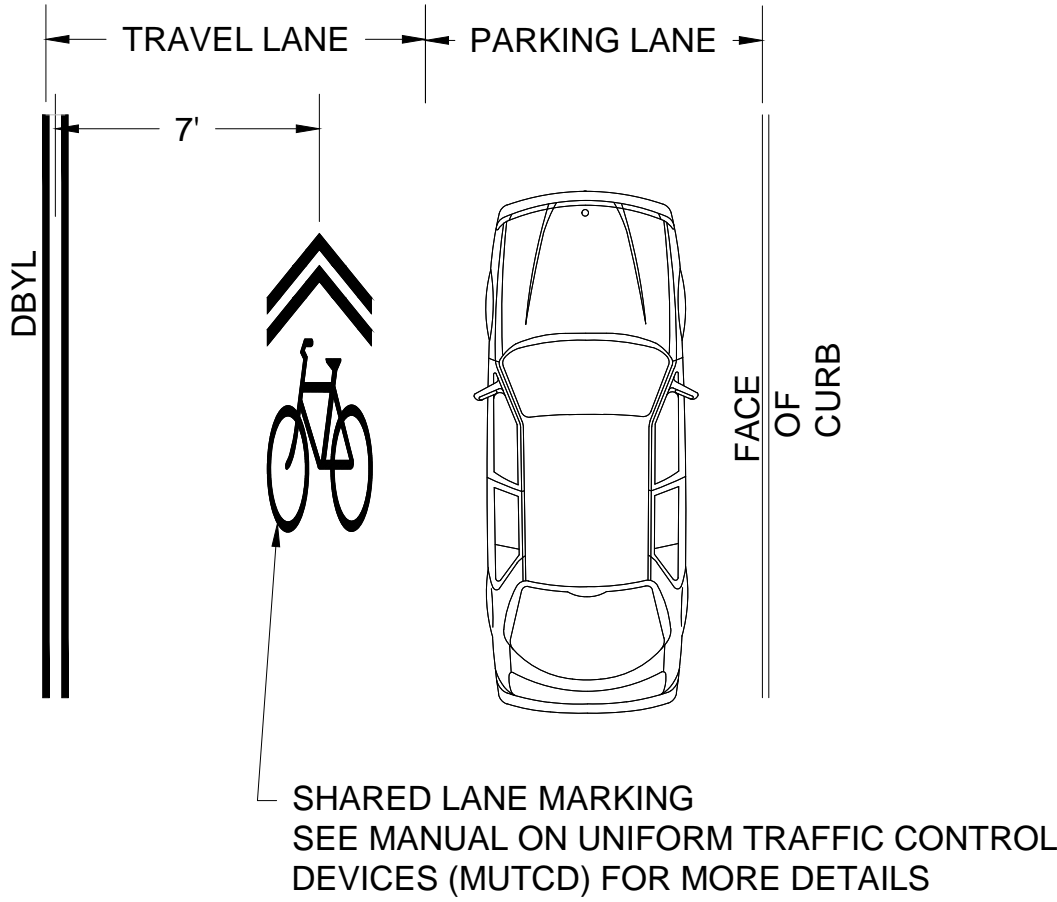
CHURCH STREET AT
WATERFIELD ROAD

CONSTRUCTION DETAILS



SUB-BASE 8" GRAVEL BORROW TYPE b
(SEE GENERAL PAVEMENT NOTE 1)

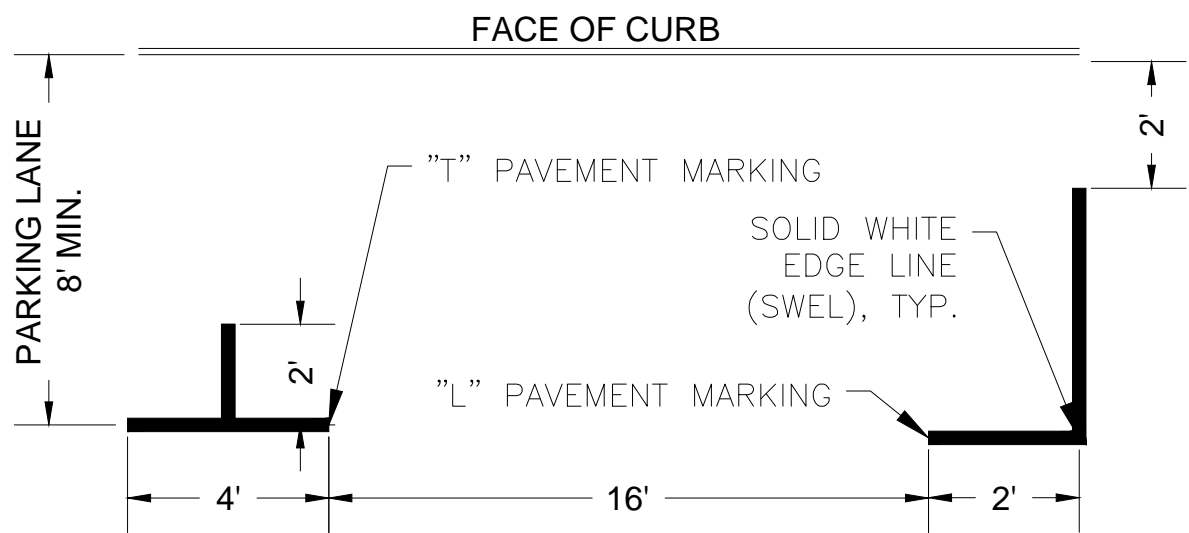
PROJECT NO.	60169
DATE	AUGUST 2021
DRAWING NO.	CD.02
SHEET NO.	15 OF 19



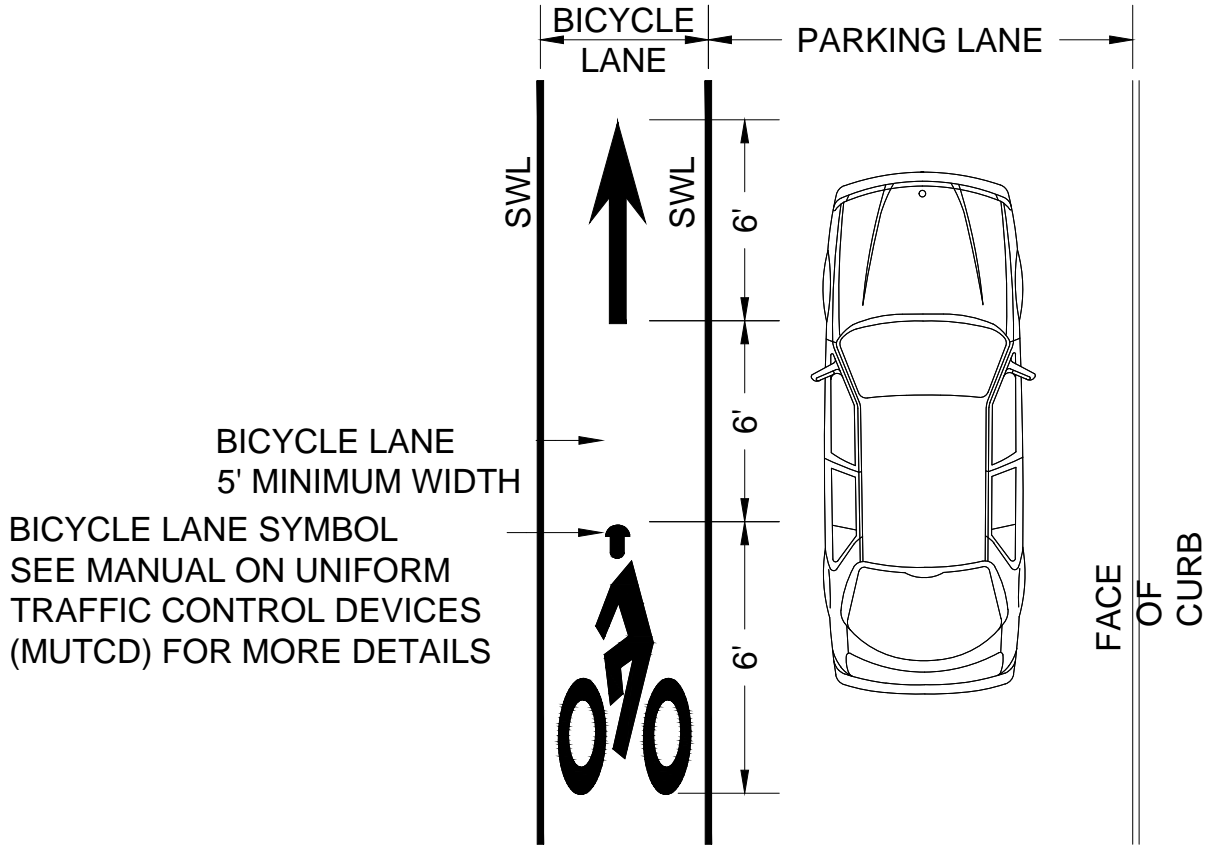
SHARED LANE MARKING SYMBOL NOTES:

- 1. IN LOCATIONS WITH ON-STREET PARKING, SHARED LANE MARKING SYMBOLS SHALL BE PLACED SO THAT THEIR CENTERS ARE 7 FEET FROM THE ADJACENT DOUBLE YELLOW CENTER LINE UNLESS OTHERWISE NOTED ON THE PLANS.
- 2. IF LOCATED IN A TURN LANE, SHARED LANE MARKING SYMBOLS SHALL BE CENTERED IN THE LANE UNLESS OTHERWISE NOTED ON THE PLANS.
- 3. DO NOT PLACE SYMBOLS ON LANE LINES.
- 4. SEE PLANS FOR SYMBOL LOCATIONS.

SHARED LANE MARKING SYMBOL
NOT TO SCALE



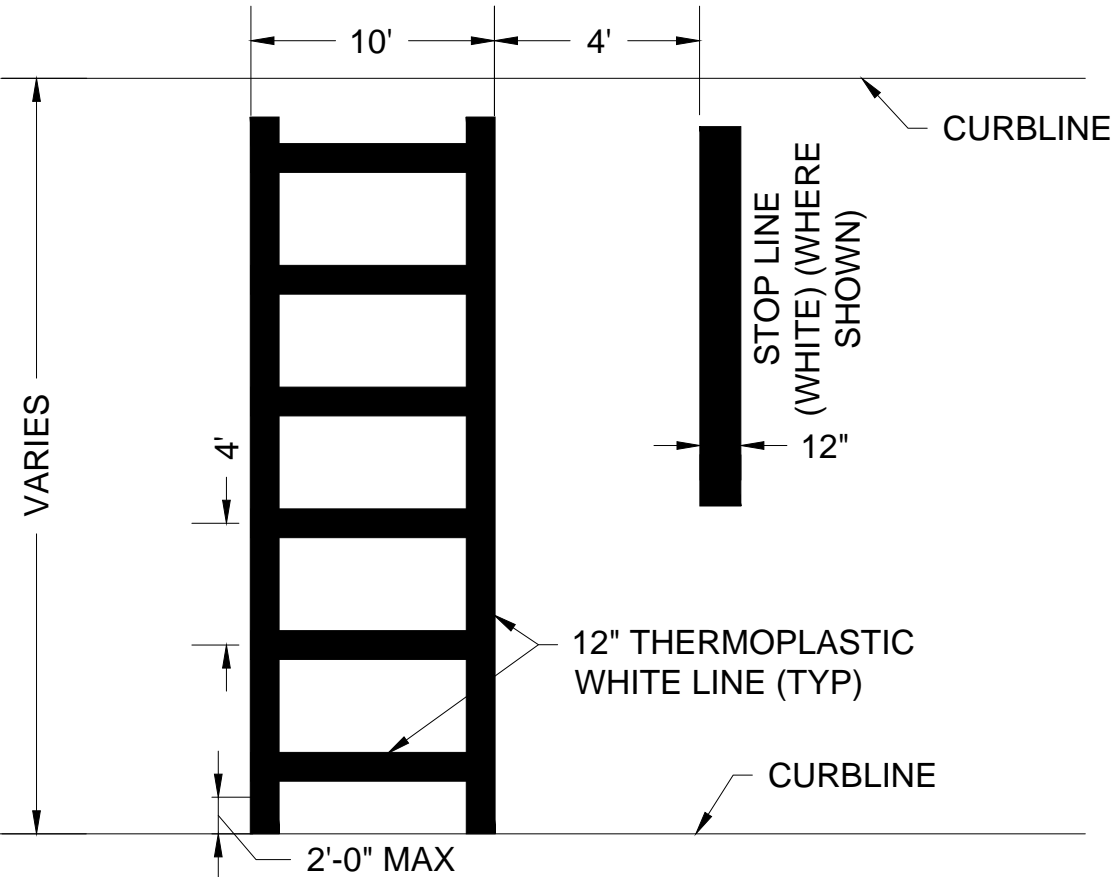
"T" PAVEMENT MARKING
NOT TO SCALE



BICYCLE LANE STRIPING NOTES:

- 1. DO NOT PLACE SYMBOLS ON LANE LINES.
- 2. PLACE BICYCLE LANE SYMBOLS WITHIN CENTER OF BICYCLE LANE.
- 3. SEE PLAN SHEETS FOR SYMBOL LOCATIONS.
- 4. TRAVEL AND PARKING LANE WIDTHS ARE AS SHOWN ON THE DRAWINGS.
- 5. DO NOT PLACE SYMBOLS WITHIN DASHED LINES.

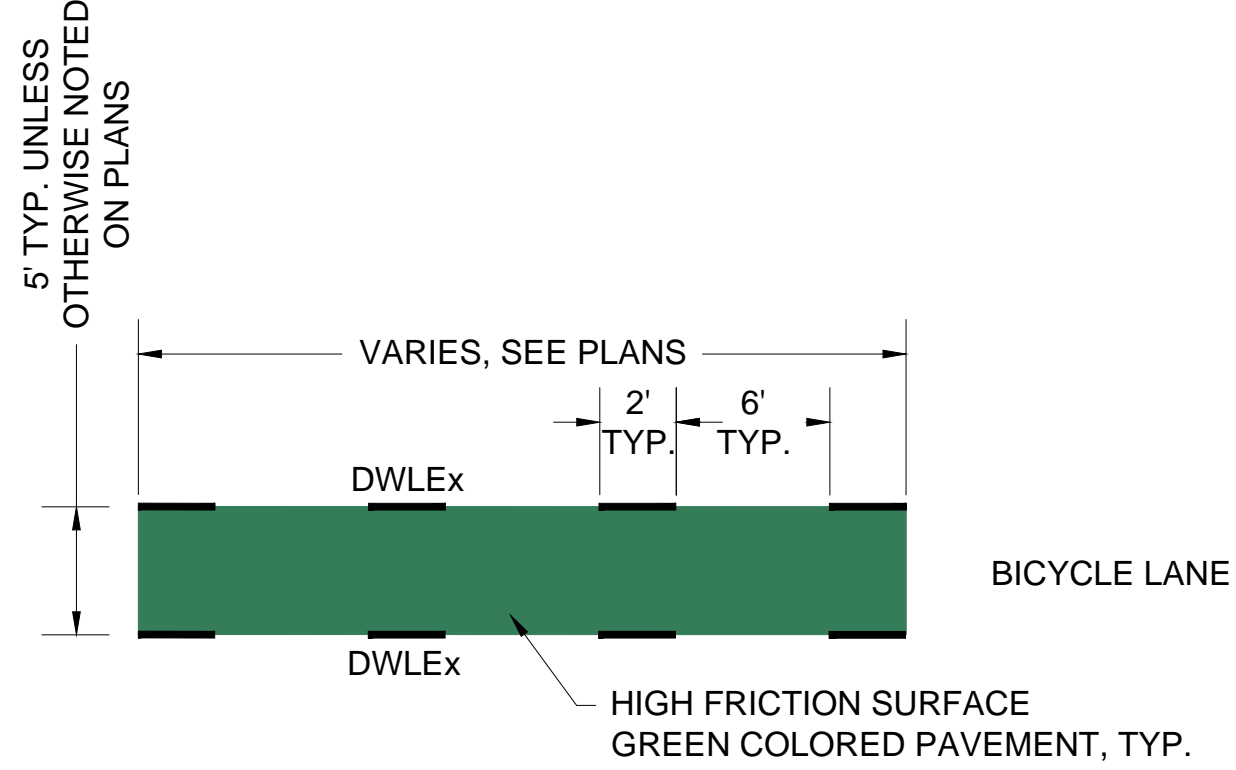
TYPICAL BIKE LANE STRIPING ADJACENT TO PARKING
NOT TO SCALE



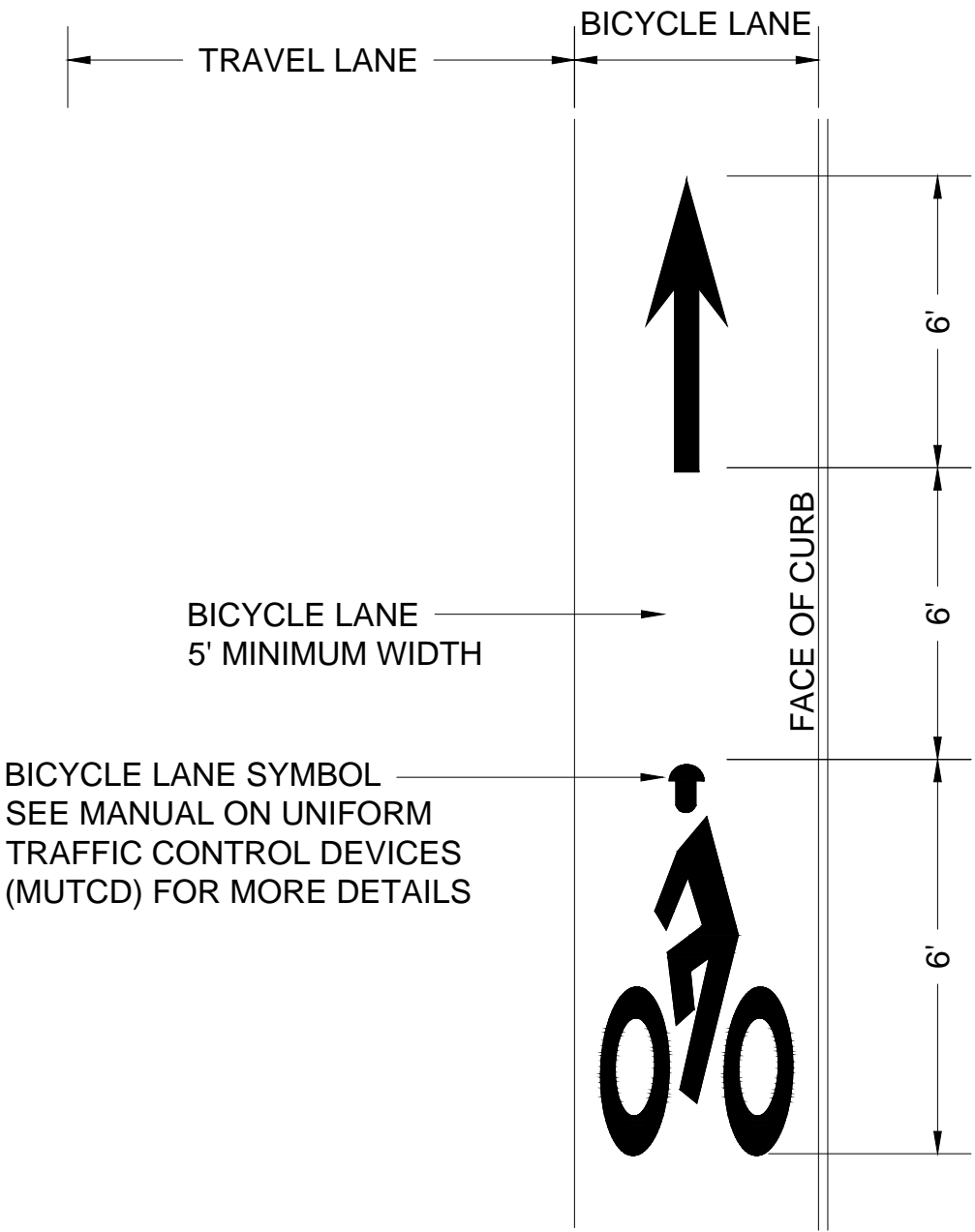
NOTES:

- 1. ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED.
- 2. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION.
- 3. CROSSWALK BARS SHALL BE PLACED OUTSIDE THE VEHICULAR WHEEL PATH WHEREVER POSSIBLE.

TYPICAL CROSSWALK PAVEMENT MARKING
NOT TO SCALE



TYPICAL BIKECROSS
NOT TO SCALE



BICYCLE LANE STRIPING NOTES:

- 1. DO NOT PLACE SYMBOLS ON LANE LINES.
- 2. PLACE BICYCLE LANE SYMBOLS WITHIN CENTER OF BICYCLE LANE.
- 3. SEE PLAN SHEETS FOR SYMBOL LOCATIONS.
- 4. TRAVEL AND PARKING LANE WIDTHS ARE AS SHOWN ON THE DRAWINGS.
- 5. DO NOT PLACE SYMBOLS WITHIN DASHED LINES.

TYPICAL BIKE LANE STRIPING ADJACENT TO CURB
NOT TO SCALE

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			DSGN	KMF					DATE	AUGUST 2021
			DR	CBK					DRAWING NO.	CD.03
			CHK	MAB					SHEET NO.	16 OF 19
		APVD	ELG	NO.	DATE	REVISION	BY	APVD		

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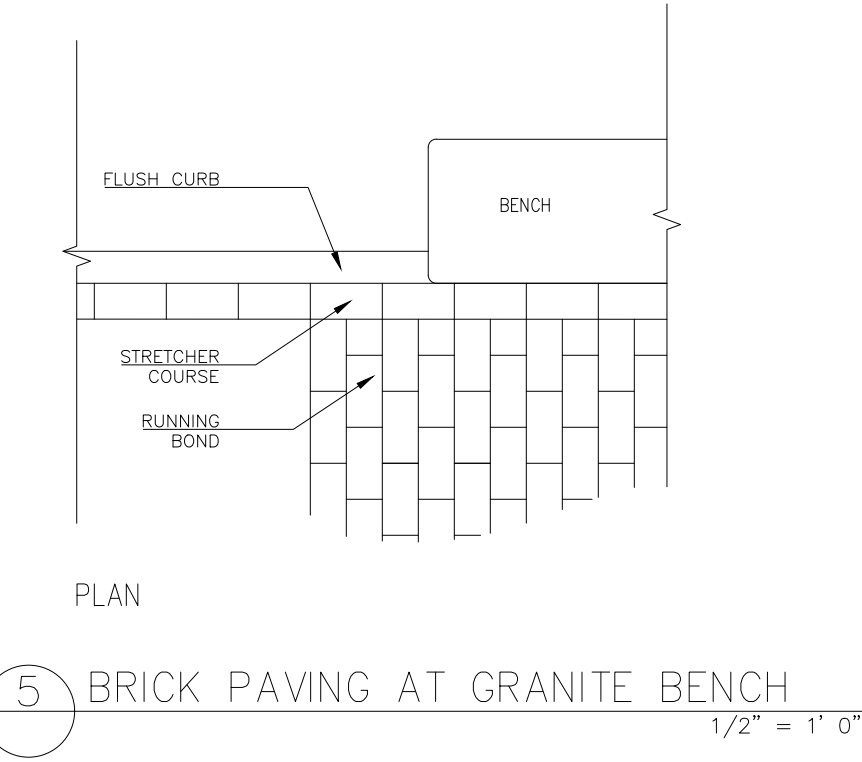
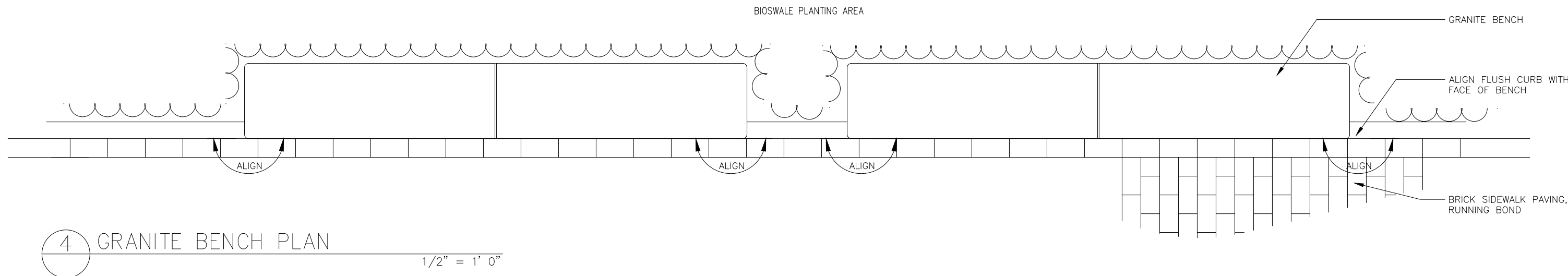
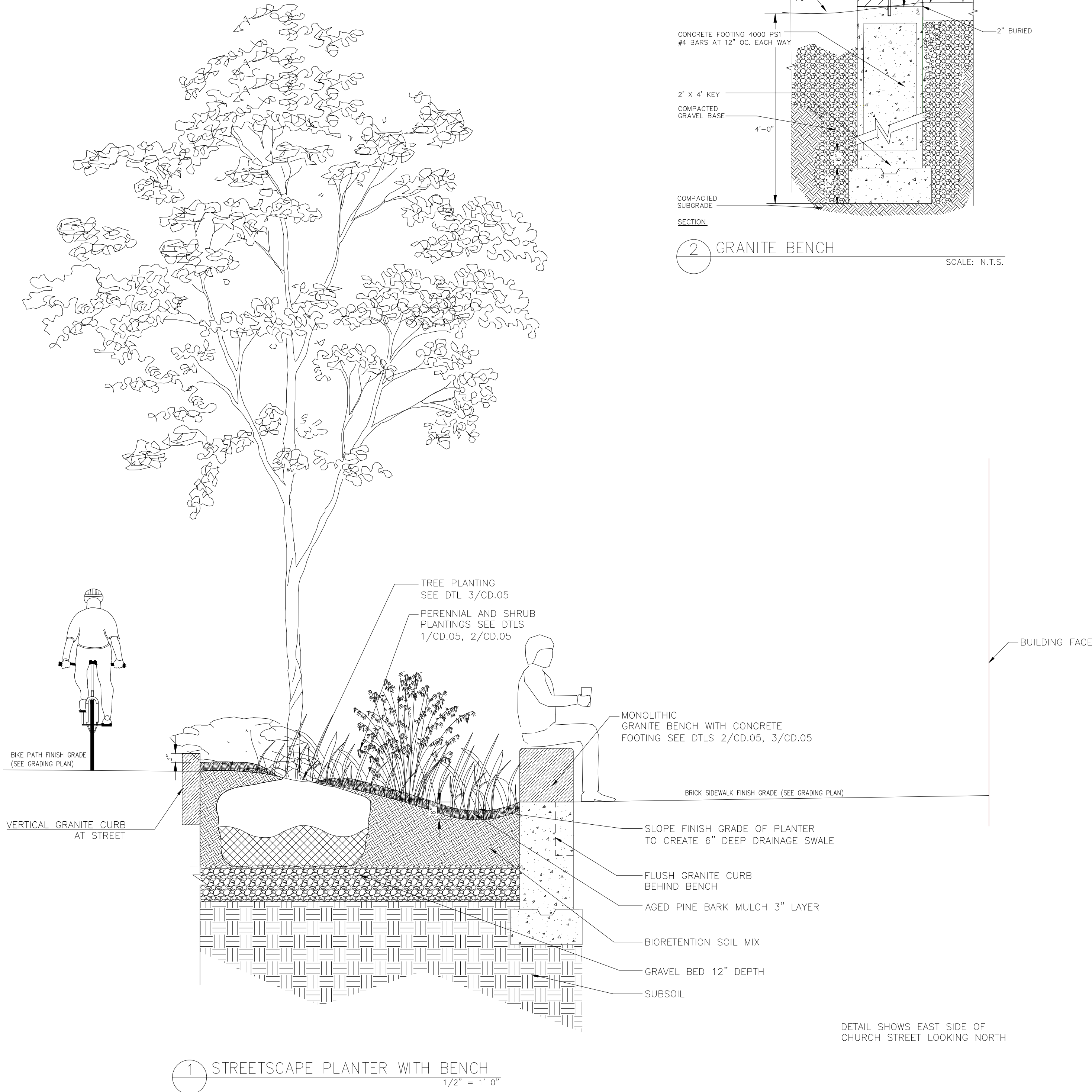
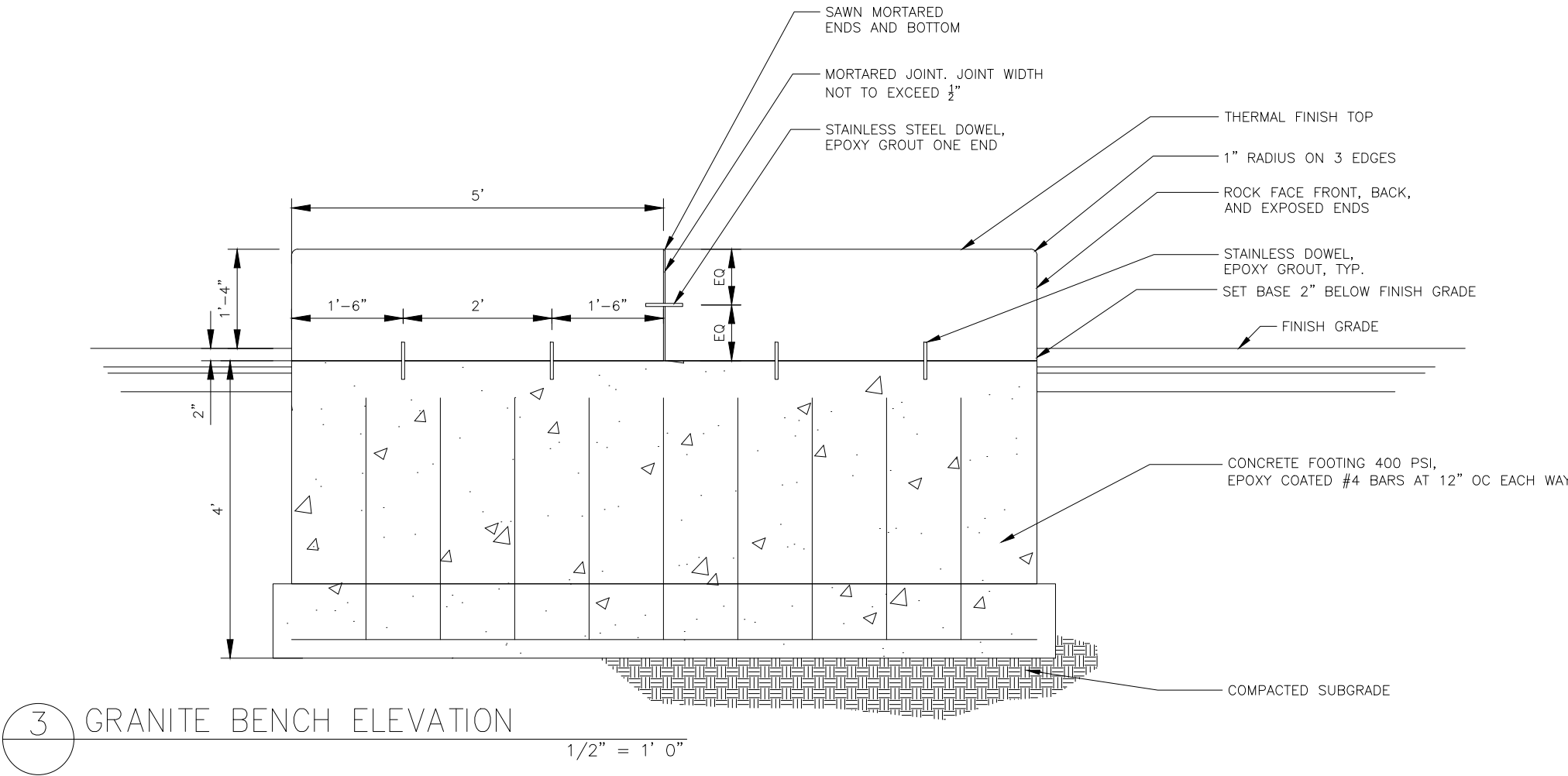
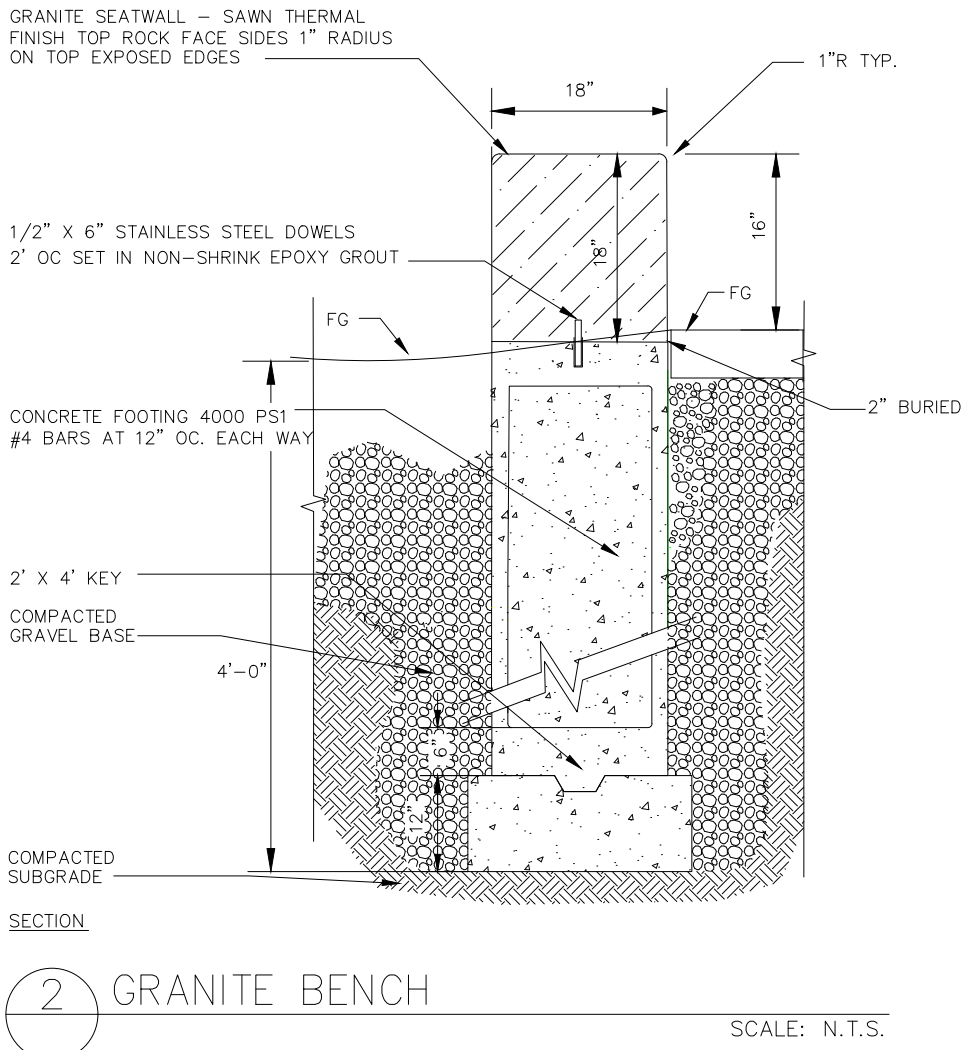
PHONE: 617.619.9910

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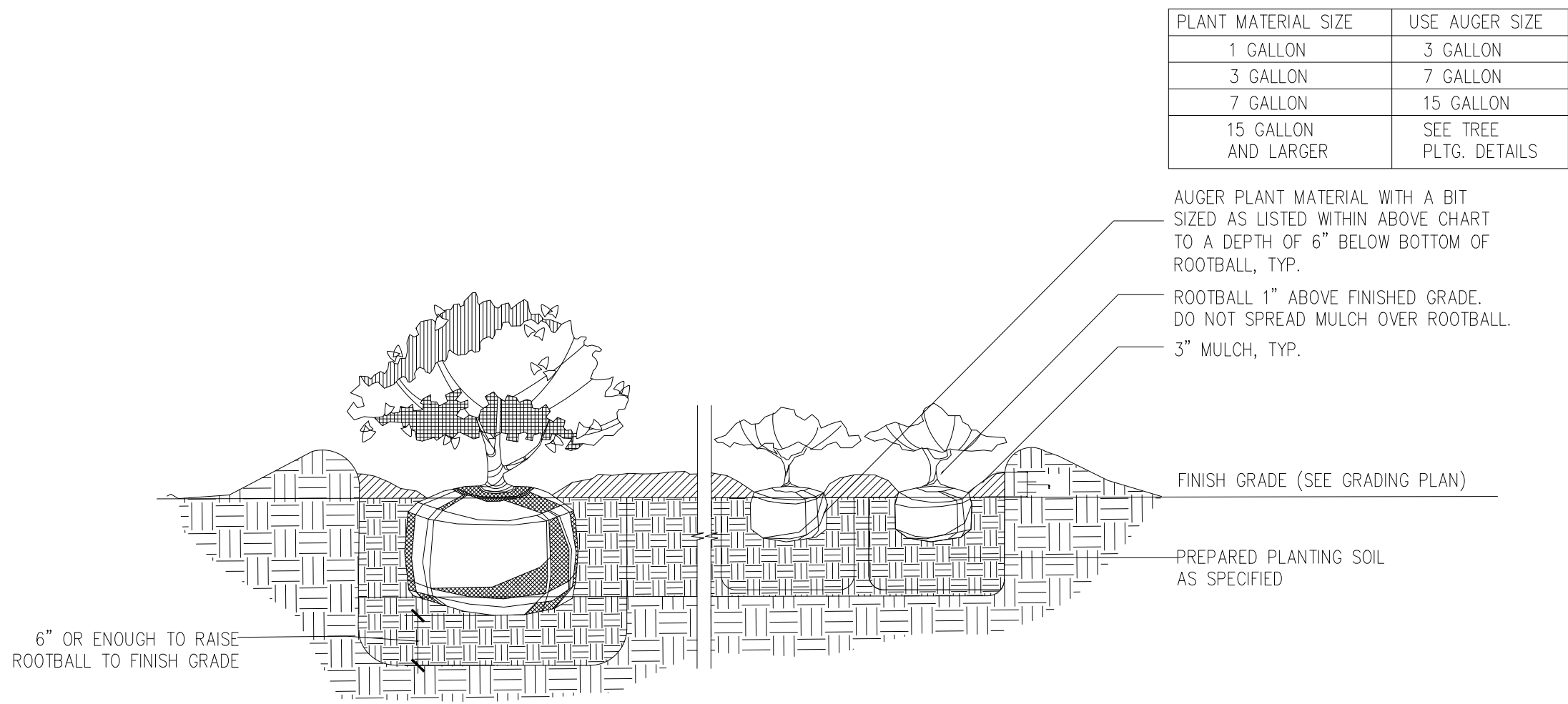
CHURCH STREET AT

WATERFIELD ROAD

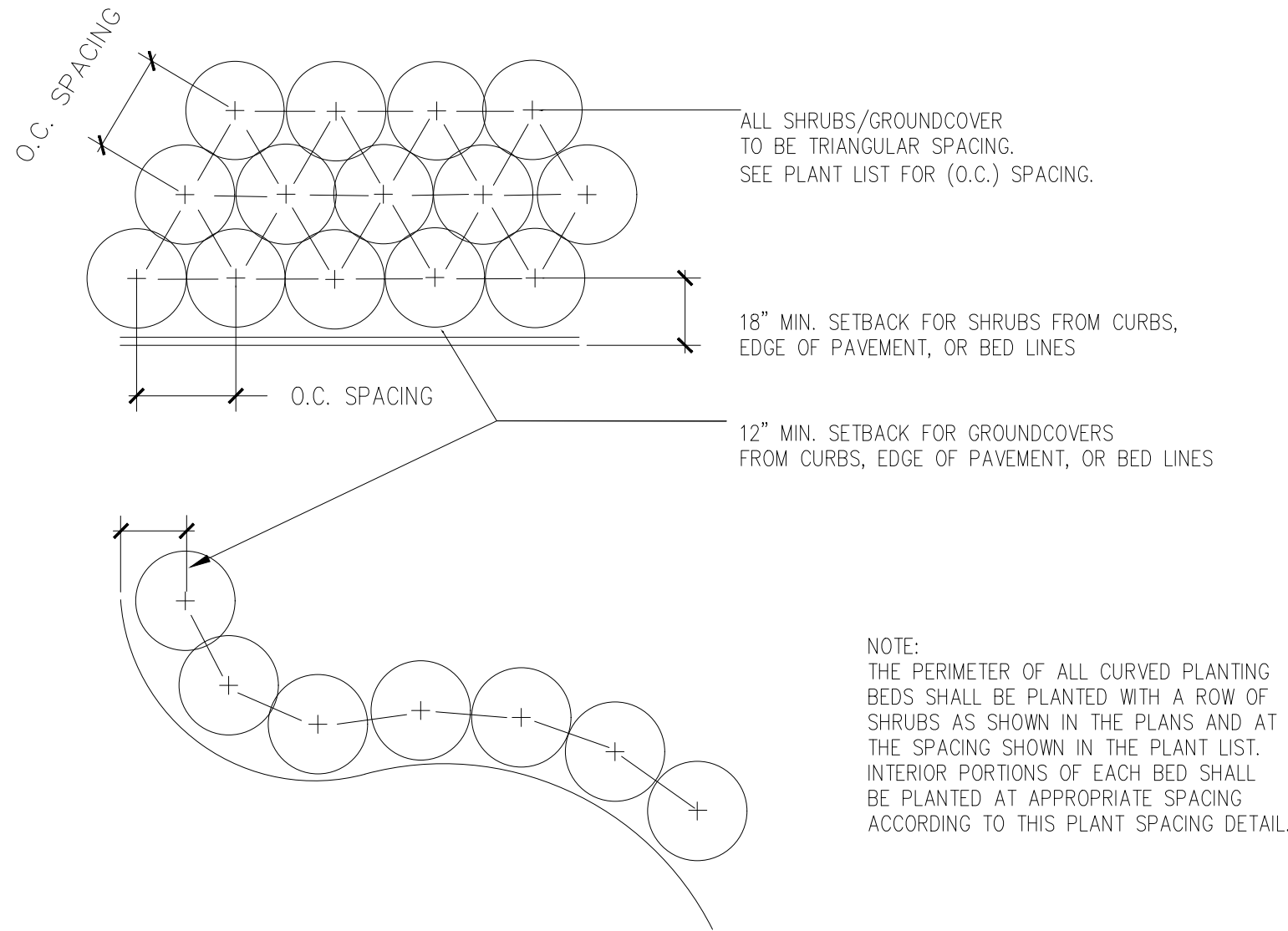


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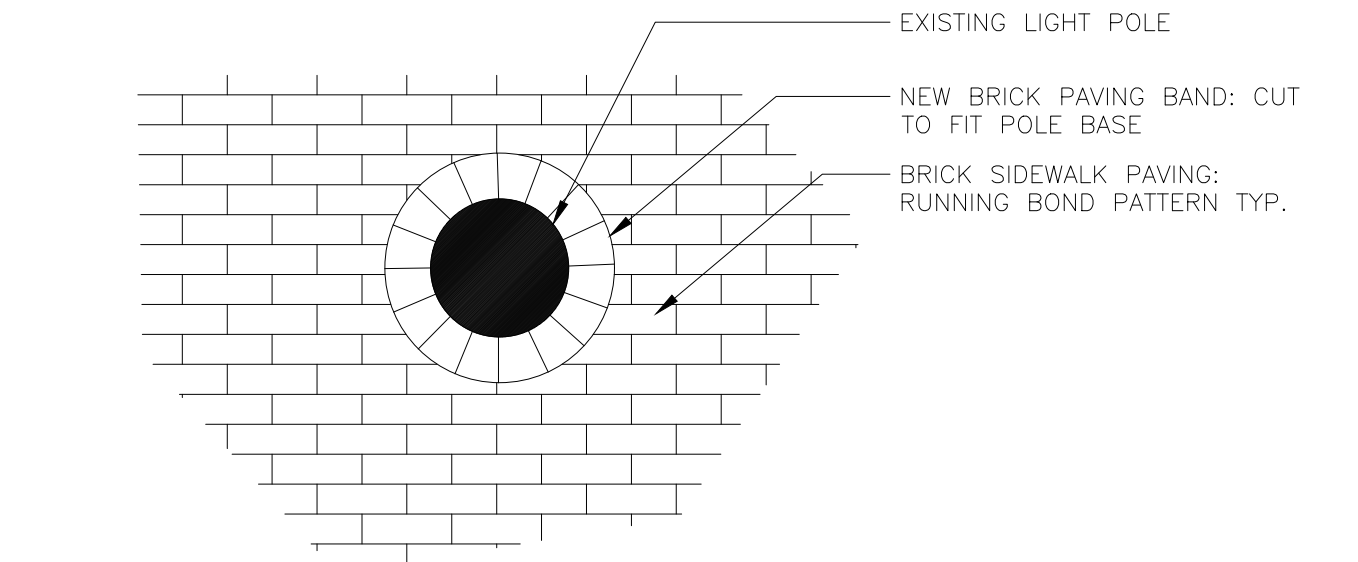
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			DSGN	KMF						DATE
			DR	CBK						AUGUST 2021
			CHK	MAB						DRAWING NO.
APVD	ELG	CD.05								
			NO.	DATE	REVISION	BY	APVD	SHEET NO.	18 OF 19	
								LANDSCAPE DETAILS		
								CHURCH STREET AT WATERFIELD ROAD		
								TOOLE DESIGN		
								2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com		



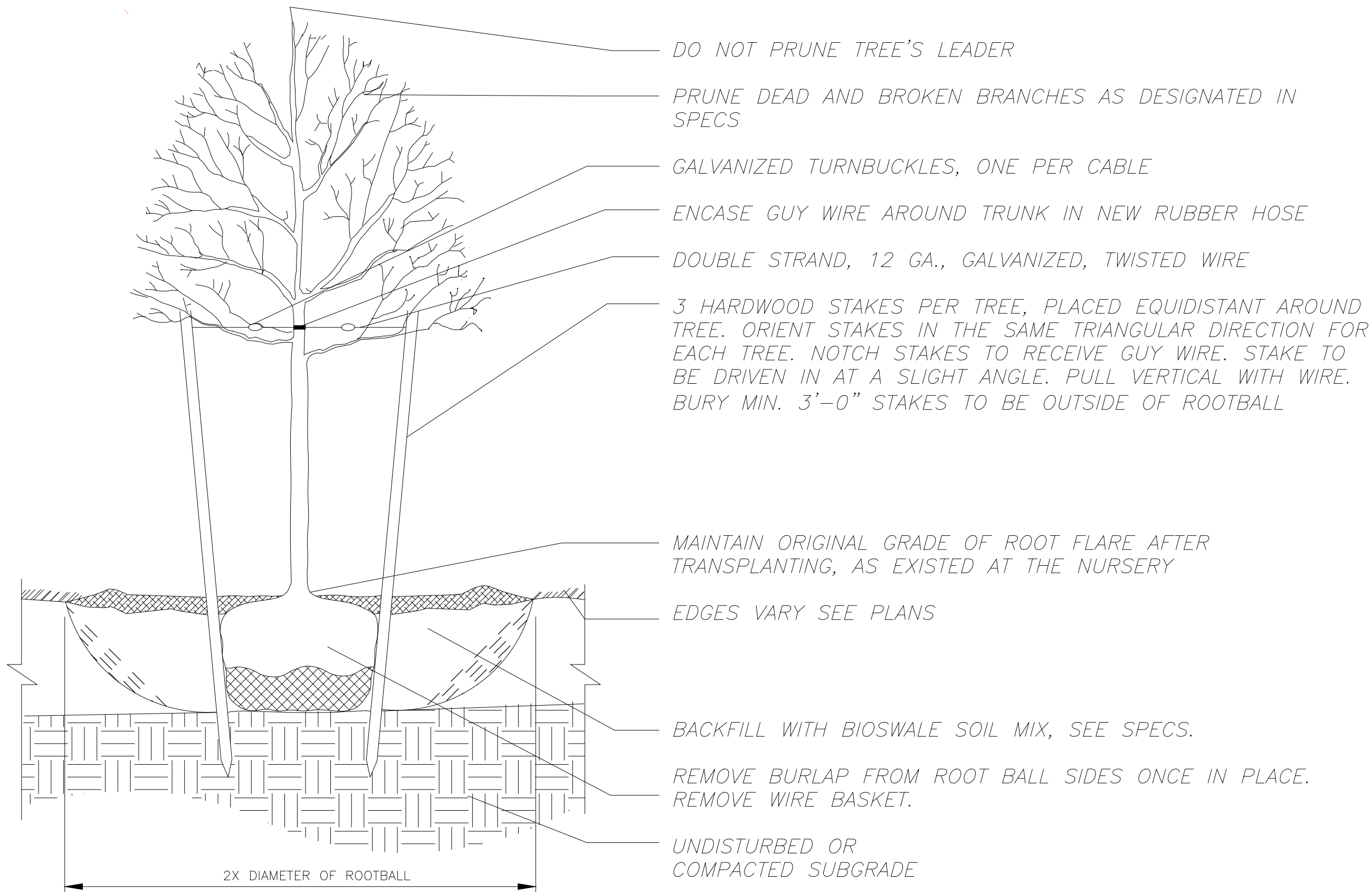
1 SHRUB AND GROUNDCOVER PLANTING DETAIL
SCALE: N.T.S.



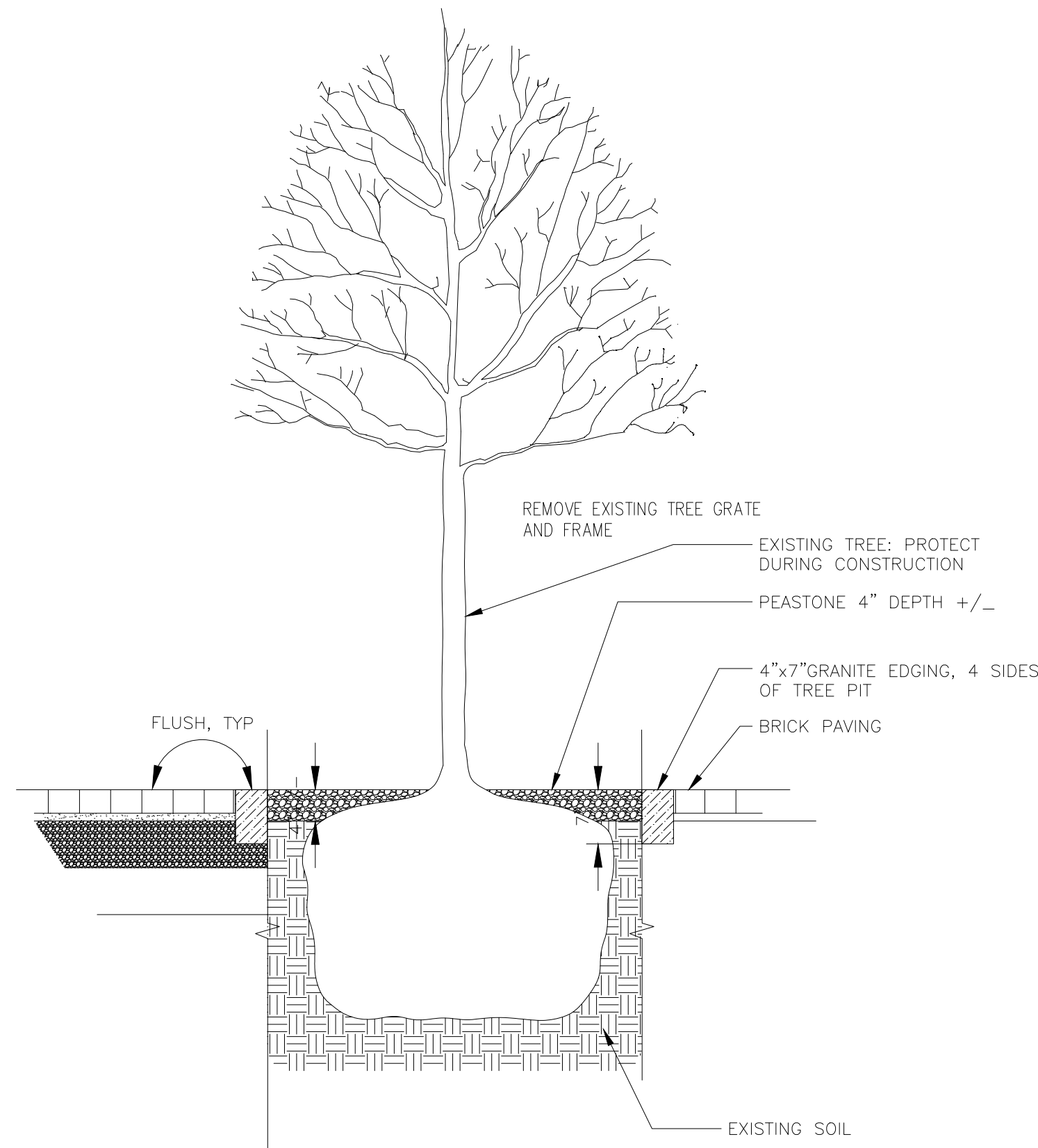
2 PLANT SPACING DETAIL
SCALE: N.T.S.



3 BRICK PAVING AT EXISTING LIGHT POLE
SCALE: N.T.S.



4 TREE PLANTING DETAIL
SCALE: N.T.S.



5 TREE PIT AT EXISTING TREE
SCALE: N.T.S.

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			CHK	MAB						DRAWING NO.
			APVD	ELG						CD.06
		NO.	DATE	REVISION	BY	APVD	SHEET NO.	19 OF 19		
		<div><div>TOOLE DESIGN</div><div>2 OLIVER STREET, SUITE 305 BOSTON, MA 02109 PHONE: 617.619.9910 FAX: 301.927.2800 www.tooledesign.com</div></div>						CHURCH STREET AT WATERFIELD ROAD		
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